

EXHIBIT

D

FOLDER 3

P+3

Virginia Cooperative Extension

Soil Test Report

Northumberland County Office
P.O. Box 400
Heathsville, VA 22473-0400
804-580-5694

Virginia Tech Soil Testing Laboratory
145 Smyth Hall (0465)
Blacksburg, VA 24061
www.soiltest.vt.edu

SEE ENCLOSED NOTES:

1 3

G
W
N
E
R

JETT LYELL
OMEGA PROTEIN
P O BOX 175
REEDVILLE, VA 22539

C F
O O
P R
Y

BILL BLACK
401 STUDEWOOD STE 208
HOUSTON, 77007

SAMPLE HISTORY

Sample ID	Field ID	LAST CROP		LAST LIME APPLICATION		SOIL INFORMATION				
		Name	Yield	Months Prev.	Tons/Acre	SMU-1 %	SMU-2 %	SMU-3 %	Yield Estimate	Productivity Group
AIRFD	AIRFIELD			---	0					III

LAB TEST RESULTS (see Note J)

Analysis	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)	S.Salts (ppm)
Result	4	38	313	54	1.1	0.8	0.3	43.6	0.1	38
Rating	L	L	L	L+	SUFF	SUFF	SUFF	SUFF	SUFF	L

Analysis	Soil pH	Buffer pH	Est.-CEC (meq/100g)	Acidity (%)	Base Sat (%)	Ca Sat (%)	Mg Sat (%)	K Sat (%)	Organic Matter (%)
Result	5.1	6.00	3.4	69.3	30.7	22.8	6.5	1.4	2.2

FERTILIZER AND LIMESTONE RECOMMENDATIONS

Crop: Orchardgrass/Fescue-Clover Pasture (40)

Lime, TONS/AC		Fertilizer, lb/A		
Amount	Type	N	P2O5	K2O
2	AG	50	50	70

890. Soil Survey map unit information was not provided, neither was a field Yield estimate. As a result only generalized fertilizer recommendations could be made. Field specific and more scientifically-based recommendations can be provided if soil map unit information is included in the future. Contact your extension agent to learn how to obtain available soil survey information for your farm.

825. If stand contains less than 25 per cent clover, apply 40-60 lbs N/A.

131. If additional production is needed later on, apply 40 to 60 lbs/A of N during the grazing season. If you are planning to overseed a legume into the stand, omit the N recommendation.

122. P2O5 and K2O recommendations are for annual application. However, rates can be doubled and applied every other year if desired.

677. Soluble Salts are not high enough to cause salt injury.

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SAMPLE HISTORY

Sample ID	Field ID	LAST CROP		LAST LIME APPLICATION		SOIL INFORMATION				
		Name	Yield	Months Prev.	Tons/Acre	SMU-1 %	SMU-2 %	SMU-3 %	Yield Estimate	Productivity Group
NETHS	NET HOUSE			---	0	MAA 100				II

LAB TEST RESULTS (see Note 1)

Analysis	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)	Salts (ppm)
Result	20	22	182	36	1.1	1.9	1.7	47.5	0.1	64
Rating	M-	L	L-	L	SUFF	SUFF	SUFF	SUFF	SUFF	L

Analysis	Soil pH	Buffer pH	Est.-CEC (meq/100g)	Acidity (%)	Base Sat. (%)	Ca Sat. (%)	Mg Sat. (%)	K Sat. (%)	Organic Matter (%)
Result	5.0	6.11	2.4	73.2	26.8	19.3	6.3	1.2	2.0

FERTILIZER AND LIMESTONE RECOMMENDATIONS

Crop: Orchardgrass/Fescue-Clover Pasture (40)

Lime, TONS/AC		Fertilizer, lb/A		
Amount	Type	N	P2O5	K2O
1.5	Dolomitic	50	90	110

825. If stand contains less than 25 per cent clover, apply 40-60 lbs N/A.

131. If additional production is needed later on, apply 40 to 60 lbs/A of N during the grazing season. If you are planning to overseed a legume into the stand, omit the N recommendation.

122. P2O5 and K2O recommendations are for annual application. However, rates can be doubled and applied every other year if desired.

677. Soluble Salts are not high enough to cause salt injury.

A+L Lab
Richard
804 743 9401

462 5780
Barbara



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CERTIFICATE OF ANALYSIS

July 06, 2006

Page 1 of 1

LAB#: 0606352
CLIENT: Omega Protein, Inc
 P.O. Box 175
 Reedville VA, 22539
 Ted Schultz
PROJECT: PHRA
PROJECT NO.:
SAMPLED BY: Bill Black
RECEIVED: 06/15/06

<u>PARAMETER</u>	<u>PREP DATE/TIME</u>	<u>ANALYSIS DATE/TIME</u>	<u>METHOD</u>	<u>ANALYST</u>
Boron	6/22/06 10:00	7/5/06 11:04	SW846/6010	JLW
Cobalt	6/22/06 10:00	6/29/06 14:44	SW846/6010	JLW
Molybdenum	6/22/06 10:00	6/29/06 14:44	SW846/6010	JLW
Sodium	7/5/06 8:00	7/5/06 13:07	SW846/6010	JLW

LAB #	0606352-01	-	-	-		
SAMPLE ID	06-405, Corner Basin	-	-	-		
DATE/TIME	05/25/06	-	-	-	Quant	
MATRIX	Soil	-	-	-	Limit:	Units
Metals (Soil)						
Boron	17	-	-	-	1	mg/kg dry
Cobalt	2.5	-	-	-	0.5	mg/kg dry
Molybdenum	<0.5	-	-	-	0.5	mg/kg dry
Sodium	136	-	-	-	50	mg/kg dry

Notes and Definitions

mg/L = milligrams per Liter
 µg/L = micrograms per Liter
 BQL = Below the Quantitation Limit

mg/kg = milligrams per kilogram
 ppm = parts per million
 CFU/mL = Colony forming units per milliliter

su = standard units
 NTU = Nephelometric Turbidity Units
 MPN/100 mL = Most Probable Number per 100 milliliters

Audrey Brubeck
Manager Analytical Laboratory Services

HEADQUARTERS: 3015 DUMBARTON ROAD • BOX 27524 • RICHMOND, VA 23261-7524
 TELEPHONE (804) 264-2701 • FAX (804) 264-1202 • www.FandR.com

BRANCHES: ASHEVILLE, NC • BALTIMORE, MD • CHARLOTTE, NC • CHESAPEAKE, VA
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 GREENSBORO, NC • HUNTERDON, NJ • JEFFERSON, NC • RICHMOND, VA • WASHINGTON, DC

CERTIFICATIONS:

VIRGINIA DRINKING WATER - 00150
 NORTH CAROLINA DENR - 432
 SOUTH CAROLINA DHEC - 93010001 & 93010
 MARYLAND DRINKING WATER - 279

Patton Harris Rust & Associates, pc

Engineers, Surveyors, Planners, Landscape Architects.

(540) 898-2115

Omega Protein

Date	Station	Oil & Grease (mg/Kg)	Chlorides (mg/Kg)	Total Phosphorus (mg/Kg)	Ammonia -N (mg/Kg)	TKN (mg/Kg)	Nitrites-N (mg/Kg)	Nitrates-N (mg/Kg)	Total Nitrogen (mg/Kg)
5/25/2006	NW Corner Basin			54.8	276	1872	<2.24	26.5	1900
	SW Corner Basin			36.0	425	1590	<2.17	<21.7	1614
	NE Corner Basin			97.8	649	2047	<2.15	<21.5	2071
	SE Corner Basin			51.8	432	1655	<2.27	<22.7	1680
	Composite	<1074	<215	43	385	1467	<2.15	<21.5	1491
Metals									
		Potassium (mg/kg)	Calcium (mg/kg)	Magnesium (mg/kg)	Copper (mg/kg)	Iron (mg/kg)	Manganese (mg/kg)	Zinc (mg/kg)	
5/25/2006	NW Corner Basi	700							
	SW Corner Basi	310							
	NE Corner Basi	323							
	SE Corner Basi	257							
	Composite	316	17.4	161	7.52	14350	17	35.2	

Patton Harris Rust & Associates, pc

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P.O. Box 781
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Fredericksburg, VA 22404

T 540.898.2115

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Omega Protein

March, 2006

Special Sample

Date	Station	Fecal Coliform (MPN/100mL)
3/3/2006	Soil Sample	<200

Dried sludge

Supplement to Virginia Pollution Abatement Permit Application, Page C-II.2, Questions #3 & #4
March 26, 2008 revised

The three areas- Net Facility, Airfield and former SeaSoast-have contained only grass for a large number of years. Considering the required buffers, the available land for application has been calculated to be Net Facility 13.1 acres, Airfield 9.1 acres and SeaCoast 5.9 acres. The basis of these calculations is shown on the attached boundary map. It has not been Omega's practice to apply any fertilizer to these areas. Omega intends to apply the dried sludge once per year in the early spring, when the grass first begins to grow. The airplanes don't use the airfield until May.

The dried soil-like sludge would be transported in dump trucks. The trucks would not be lined because the moisture content is less than 10% so there is no free water. Once dumped, the soil would be spread by front end loaders and/or bull dozers. The dumping would be controlled whereby a truck of given capacity would have a calculated area marked on the grass. For example, trucks are typically 16 yards capacity, 16 yards is equal to $16 \times 65 = 1040$ pounds. 1040 divided by $3.5 \text{ lbs/ft}^2 = 297$ square feet or an area about 17 feet by 17 feet.

Regarding the supply of sludge, there is approximately 50,000 cubic feet of wet sludge in the holding basin. The sludge was removed from the industrial treatment pond in early 2005. We anticipate removing sludge from the treatment pond about every 5 years. At 65 lbs/cubic foot, (sludge that has been dried and has a moisture content of 10%), there is 1462.5 dry tons of sludge to be spread. The controlling PAN/DT is 21.7 dry tons per acre. A total of 289 dry tons would be applied over 13.1 acres.

The limit of 15 dry tons per acre for the Airfield (9.1 acres) and SeaCoast property (5.9 acres). The total of 289 dry tons applied at the Net Facility and the 136 dry tons applied over the Airfield and 88.5 over the SeaCoast property. The limit of 15 dry tons per acre is not a limit at the Net Facility since we have installed monitoring wells so to monitor the groundwater. Total application is shown in the table below. If the first application was in 2008, the holding basin would be empty by late 2010, ready to receive new sludge if it was determined that new sludge needed to be removed by then. Omega doesn't anticipate removing more sludge from the treatment ponds before the year 2010.

If the Net House is limited to 15 dry tons per acre per year, then:

Area	App Rate	Year 1	Year 2	Year 3
Net House	21.7	284 DT	284 DT	284 DT
Airfield	15 DT/acre	136	136	74.5
SeaCoast	15	<u>88</u>	<u>88</u>	<u>88</u>
Cumulative Totals		508	1016	1462.5

At the rate of 21.7 dry tons per acre , the cumulative loading of metals is shown on the attached spreadsheet. Thus, there is no limit for 106 plus years assuming no uptake by the grass.

The sodium adsorption ratio (SAR), using Na=51.2, Ca=1400 and Mg=300, is calculated to be 0.33, using the formula below, thus, no soil amendments are needed.

$$\text{SAR} = \text{Na}/23 \text{ mg/Meg divided by the square root of } [(Ca/20 \text{ mg/meg} + Mg/12 \text{ mg/meg})/2]$$

Add Aluminum

Supplement to Virginia Pollution Abatement Permit Application, Page C-II.3,
Question #8
March 25, 2008 revised

Agronomic Rates

Using the Virginia Cooperative Extension equation given in DEQ letter dated September 13, 2007 and available data, perform the applicable calculations.

Use fescue grass as the only crop.

Agronomic Nitrogen (N)

Fescue grass—use N = 120 lb/ac as needed loading rate

Assume that N is very mobile. Therefore, other sources of N=0 because legumes have not been grown, N has not already been applied and previous waste has not been applied.

Therefore, the Adjusted N rate remains at 120 lb/ac.

Calculate PAN/dry ton for the first year of application. PAN is "plant available nitrogen".

$$\text{PAN/DT sludge} = 20[(F)(\% \text{ Org-N}) + (V)(\% \text{ NH}_3\text{-N})]$$

PAN=lbs of plant available N per dry ton of Biosolid

F = mineralization of organic nitrogen in sludge within the first year of application = 0.1

V = Amount of NH₃-N not volatilized as determined by: (1) the degree of incorporation and the waiting period before incorporation, at or following land application, and (2) the pH of the sludge = 0.5

Second year = PAN/DT Sludge – 0.05 * % Org N

Third year = PAN/DT Sludge – 0.03 * % Org. N

NH₃-N = 900 ppm = 0.09%

TKN = 4100

Org N = TKN-NH₃-N = 4100-900 = 3200

% Org N = 3200/10000 = 0.32%

PAN/DT Sludge = 20(0.1)(0.32) + 0.5(0.09) = 0.64 + 0.045 = 0.685 lbs/dry ton Sludge

Second Year = $PAN/DT - 0.05 * \% \text{ Org N} = 0.685 - (0.05)(0.32) = 0.669 \text{ lbs DT Sludge}$

Third year = $PAN/DT - 0.03 * \% \text{ Org N} = 0.685 - (0.03)(0.32) = 0.675 \text{ lbs DT Sludge}$

Adjusted N rate = $120 \text{ lbs/DT} / 0.685 \text{ lbs/DT} = 175 \text{ DT/ acre}$

Agronomic P rate

Agronomic P rate = $P_{\text{req}} / \text{Available } P_2O_5 / \text{dry ton}$

P_{req} = The P fertilizer recommended for the harvested crop or the quantity of P removed by the crop

Avail. $P_2O_5 = 0.5$ (total P_2O_5 /dry ton biosolids)

Total P_2O_5 /dry ton = $\%P \text{ in biosolids} \times 20 \times 2.3$

$\% P = 1000 \text{ ppm} = 0.1\%$

$P_{\text{req}} = 50 \text{ lbs/acre}$ based on VA Co-op rating for the Airfield

Total $P_2O_5 /DT = 0.1 \times 20 \times 2.3 = 4.6$

Avail $P_2O_5 = 2.3 \text{ lbs/dry ton biosolids}$

Agronomic P rate = $50 / 2.3 = 21.7 \text{ dry tons/acre}$

The Agronomic N rate exceeds the P rate, thus the P rate controls

Potassium

All potassium in biosolids is available.

$\%K = 300 \text{ ppm} = 0.03\%$

Available $K_2O = \% K \text{ in biosolids} \times 20 \times 1.2 = 0.03 \times 20 \times 1.2 = 0.72$
 $= 0.72 \text{ lbs } K_2O / \text{dry ton biosolids}$

Assume K_2O x required = 70 lbs/acre based on VA Co-op rating for Airfield

Agronomic K rate = $70 \text{ lbs/acre} / .72 \text{ lbs/dry tons biosolids} = 97.2$

The Agronomic K rate exceeds the P rate, thus the P rate controls

Cumulative application of trace elements
Omega Protein

Revised March 2008

Trace Element	Maximum cumulative lbs/acre	Concentration of element mg/kg	amount of metals per acre if Sludge application rate = 15 dry tons/acre/year	Years until element is at maximum with no crop uptake	amount of metals per acre if Sludge application rate = 21.7 dry tons/acre/year	Years until element is at maximum with no crop uptake
cadmium	35	7.6	0.228	153.51	0.32984	106.11
copper	1340	50.55	1.5165	883.61	2.19387	610.79
lead	270	7.8	0.234	1153.85	0.33852	797.59
nickel	375	12	0.36	1041.67	0.5208	720.05
zinc	2500	11.02	0.3306	7562.01	0.478268	5227.19

Aluminum Loading Calculation from page 20 of Industrial Waste Application Guidance

Assume:

Estimated Sludge residuals Al (see below)	3,851 mg/kg dry wt.
Soil bulk density	1.31 gms/cc soil
Density of soil 6 in. x 1 acre	1.7857×10^6 lbs/ac/6 in.
Two Soils Al background concentration	6,760 mg/kg dry wt to 31,800 mg/kg dry wt
Loading limits	15 dry tons/acre and 21.7 dry tons/acre

Mass of Al/acre in the top 6 inches of soil:

$$\frac{6760 \text{ parts Al}}{10^6 \text{ lbs}} \times 1.7857 \times 10^6 \text{ lbs/acre/6 in} = 12,071 \text{ lb/acre}$$

$$31,800 \text{ parts Al} \times 1.7857 \times 10^6 \text{ lbs/acre/6 in} = 56,785 \text{ lb/acre}$$

Estimated Sludge Residuals Al:

The application of Alum to both ponds during the Winter 2008 added a total of 100 lbs Al. The Clemson analysis indicated an existing Al concentration of 3,629 mg/kg

Assuming that the next sludge removal will produce the same amount as the first removal, then 45,000 lbs dry wt sludge will have (worst case, all 100 lbs of Al added) 100 lbs.-- $100/45,000 = 222 \text{ mg/kg}$. Adding 222 to 3,629 = 3,851 mg/kg

Mass Loading in Aluminum in Top 6 inches of Soil:

$$15 \text{ dry tons} \times 2000 \text{ lbs/ton} \times \frac{3,851 \text{ mg/kg}}{10^6 \text{ soil}} = 115.5 \text{ lb/acre}$$

$$21.7 \text{ dry tons} \times 2000 \text{ lbs/ton} \times \frac{3,851 \text{ mg/kg}}{10^6 \text{ soil}} = 167.1 \text{ lb/acre}$$

Percent Increase in Aluminum in Top 6 inches of Soil for 15 dry ton loading:

1.0 % for the soil with the lowest Al levels

0.2 % for the soil with the highest Al levels

Percent Increase in Aluminum in Top 6 inches of Soil for 21.7 dry ton loading:

1.4 % for the soil with the lowest Al levels

0.3 % for the soil with the highest Al levels



Healthy Products for a Healthy World

April 4, 2008

RECEIVED

APR 07 2008

PRO

Denise Mosca, Environmental Specialist II
Virginia Department of Environmental Quality
4949-A Cox Road
Glen Allen, Virginia 23060

Re: VPA permit Issuance VPA01428

Dear Ms. Mosca *Denise*

This letter is in response to your letter of September 13, 2007 regarding comments on our VPA application. The data set has been corrected as outlined in the second paragraph of your letter. Calculations have been corrected using the appropriate data. An aluminum loading calculation is attached. The PAN/DT calculations were revised. Also corrected were the land area determinations to allow for a 25 foot buffer for improved roadways.

We have re-submitted a revised Form C with the corrected attachments. Not re-submitted are the USDA, boundary map and Swift Creek Environmental attachments to the original application.

Sincerely,

Bill

William Purcell
Environmental Director
Omega Protein, Inc.

pc: Tom Wittman, Omega Protein
Bob LaBruzzo, Omega Protein
Bill Black, EnPro

Attachments

VIRGINIA POLLUTION ABATEMENT
PERMIT APPLICATION

FORM C
INDUSTRIAL WASTE
Revised March 2008

Department of Environmental Quality

VPA FORM C INDUSTRIAL WASTE INSTRUCTIONS

This form is to be completed by applicants requesting a VPA permit for industrial waste management systems. All industrial applicants must submit Part I of Form C. Part II must be submitted by applicants who use land application treatment systems for wastewater or sludge. In addition, certain industrial categories may be required to submit more information than this application requests. A preliminary meeting with the local DEQ Regional Office is recommended prior to completing any part of Form C.

PART C-I

1. **FACILITY NAME:** Name as given on Form A line 1.

2. **SOURCE OF WASTE:**

- The applicant should supply a short description of the specific manufacturing operation at the facility.
- A line drawing, in block diagram form, is to be furnished. Show the various steps or units of the manufacturing or processing operations, all points where industrial wastes or other wastes are produced, the volume of wastes generated at each location, and their method of disposal. List raw materials and show the points where they enter the process. Finished products and the points where they emerge from the process are also to be shown.
- Describe how sewage from employees is handled. (i.e., does it go to a septic tank/drainfield, local sanitary sewerage system, etc.).
- In the space provided, show the maximum and average hours/day and days/week of operation and the specific months of operation.

3. **NON-HAZARDOUS DECLARATION:** All industrial facilities must sign this declaration in order for the application to be complete. The signature must be in accordance with DEQ's Permit Regulation. The applicant should evaluate waste characteristics as required by Federal and State Regulations to determine if it is hazardous or non-hazardous (TCLP or other tests required by Department of Environmental Quality). If identified as hazardous, it should be processed as a hazardous waste according to the requirements of RCRA and State Regulations.

4. **WASTE CHARACTERIZATION:** Waste characterization applies to waste being removed from the waste management system. For land application operations, analysis should be conducted on waste to be land applied. For proposed operations, estimates may be used based on the characteristics of similar facilities. Provide the references to identify the similar facility.

The applicant is required to test for all parameters listed in 4.a. and/or 4.b., whichever group of parameters are appropriate. Should you feel that any of the required parameters are not appropriate for your operation, you may request in writing that the testing requirement be waived. The letter should accompany the VPA application when a submission is made. It must be pointed out that your waiver request should be reviewed with a

DEQ Regional Office permit writer before the waiver is requested. Enough information must be available on characteristics of the waste to support issuance of the VPA permit. If the waiver request is denied, then the entire application package will be returned incomplete.

DEQ places great importance on waste characterization. In Item 4.c., the applicant is requested to indicate if a parameter (not listed in 4.a. and/or 4.b.) is believed present or absent. If believed present, at least one analysis should be conducted. If the application is for both wastewater and sludge, make an additional copy of Part 4.c and answer for both.

If the application is for a waste management system that uses recycling, the waste characterization may be substituted by supporting documentation, for example, MSDS sheets.

5. **POLLUTANT MANAGEMENT FACILITIES:** Provide a detailed flow chart in block diagram form showing the interrelation of all the treatment facilities. Include handling, treatment storage and disposal units in this chart. Recycle systems are also to be included for this application requirement.

OPERATIONS: Using the above flow diagram as a reference, describe the pollutant management operation of each unit and the system as a whole.

6. Please indicate the type and number of waste treatment units or storage facilities at your operation. Please also indicate if the facility is proposed or existing.

7. All waste treatment, storage facilities and land application sites must be approved by the Department of Environmental Quality. If the existing facilities have not been approved, it will be necessary to submit a conceptual engineering report. It is also suggested that you discuss this matter with a representative of a DEQ Regional Office before submitting the report.

8. If previously approved facilities have been expanded, a conceptual engineering report must be submitted to DEQ for approval for the expanded unit(s) as required by the application.

9. **CONCEPTUAL DESIGN:** Waste management facilities require technical expertise in the planning, design and construction phases of the project to insure that 1) the facility will meet the operational needs of the owner, 2) the facility is structurally sound and 3) the treatment system meets all necessary regulatory requirements. Detailed discussion of plans and specifications for the structural stability of the treatment works are beyond the scope of these instructions. Such expertise is available to owners through private engineering firms and Virginia universities. It should be emphasized that the structural integrity of all facilities is the responsibility of the owner.

Applicants should provide design information and/or calculations such as capacities, construction materials, flow directions, loading rates and water balance figures for the waste management structure and any associated piping and pumps. The following areas should be considered in preparing the conceptual design.

STORAGE/TREATMENT FACILITY CAPACITY: Facilities must be designed and operated to prevent point source discharge of pollutants to State waters except in the case of a 25 year-24 hour or greater storm event.

DEQ recommends the storage capacity be sufficient to ensure that wastes do not have to be applied to the land when the ground is ice or snow covered, too wet or during periods when fields are unavailable for waste utilization because of the cropping plan. A minimum 60-day storage capacity for wastewater or sludge is recommended to be designed into all pollution abatement facilities.

DEQ suggests that the storage facilities have a 2 ft. freeboard at all times.

GROUND WATER PROTECTION: Storage facilities and treatment works must be designed and operated to ensure compliance with the provisions of the Water Quality Standards for ground water. DEQ suggests that liners be installed in earthen storage facilities located in rapidly permeable soils (> 2.0 in/hr) or where Karst geology or shallow and fractured rock is encountered.

The Department of Environmental Quality requires lagoon liners to have a maximum coefficient of permeability of 1×10^{-6} cm/sec. It is recommended that soils used as liners be capable of achieving a maximum coefficient of permeability of 1×10^{-7} cm/sec or less. Total soil liner thickness should be one foot after compaction of two separate lifts of equal thickness.

Synthetic liners are preferred and should be a minimum of 20 mil. thickness, appropriate for the type wastewater, and be appropriately protected from puncture both below and above the liner. The liner should clearly be installed according to

manufacturers specifications. Such specifications should also include recommendations, if any, for periodically inspecting the integrity of the liner.

A 2-foot separation distance between the facility bottom and the seasonal high water table is recommended.

WASTE VOLUMES: Accurate estimates of waste volumes are necessary to calculate properly sized waste holding and treatment facilities. Wastewater from contaminated storm water inputs to the pollution abatement facilities must also be considered, i.e., rainfall on to the facility surface and runoff from

10. **FLOOD POTENTIAL:** DEQ recommends that waste storage structures not be located on a floodplain unless protected from inundation or damage by a 100-year frequency flood event. Consult your local county zoning/planning office for information on flood plain locations and flood protection options. Such information may be available upon request.

11. Storm water runoff may be generated by parking lots, plant roofs or by the surrounding terrain. Proposed or existing facilities should be designed to contain the runoff from a 25 year 24 hour

12. **LAND APPLICATION OF WASTES:** Facilities which land apply waste must complete Part C-II.

PART C-II

If instructions beyond those in the form are needed, contact the DEQ Regional Office for assistance.

VIRGINIA POLLUTION ABATEMENT PERMIT APPLICATION

FORM C

INDUSTRIAL WASTE

PART C-I General Information

1. Facility Name: Omega Protein, Inc.

2. Source(s) of Waste

- a. *Provide a narrative which explains your facility operations and how wastes are produced.*

Menhaden fish caught in the Atlantic Ocean and Chesapeake Bay are steam cooked, then pressed to separate fish meat and liquids. Oil is then separated from water which contains proteins. The water containing proteins is evaporated to a concentrate that can be added back to the fish meal. The condensate from the evaporator contains BOD and ammonia and is, thus, a waste water. There are no chemicals used in this process. The condensate is delivered to biological treatment ponds for the purpose of reducing BOD and ammonia to concentrations allowed by the VPDES permit for discharge. The biological process produces a sludge that settles to the bottom of the pond. For several reasons, the sludge must be periodically removed.

- b. *Attach a line drawing of the facility in block diagram for showing the manufacturing or processing operations and all points where wastes are produced. Attached*

- c. *Explain how sewage from employees is handled (i.e., septic tank/drainfield, sanitary sewer etc.) -*

All sanitary sewage from employees is delivered to sanitary sewers and to the Reedville Municipal Treatment Plant.

d. **Operational Parameters**

Maximum hours/day of operation:	<u>24 hours per day, maximum</u>
Average hours/day of operation:	<u>18 hours per day average</u>
Days/week of operation:	<u>5 to 6 days per week</u>
Specific months of operation:	<u>May through December</u>

3. **Non-Hazardous Declaration**

a. **Statement for Plant Operations**

Is any part of the manufacturing operations, plant processes or waste treatment facilities at these plant facilities under the purview of the "Virginia Hazardous Waste Management Regulations" or the "Virginia Solid Waste Management Regulations?"
Yes _____ No XX

If Yes, please provide a brief explanation of the type of permit or requirements that apply.

b. **For waste to be land applied, a responsible person, as defined by VR680-14-01, must sign the following statement.**

I certify that the waste described in this application is non-hazardous and not regulated under the Resource Conservation and Recovery Act.

Robert H. McGinnis Date April 8, 2008
(Signature of Owner)

4. Waste Characterization

- a. *Wastewater - Provide at least one analysis for each parameter. additional analyses may be required by DEQ.*

Upon review,

Parameter	Concentration
Flow to treatment	_____ MGD
Flow to storage	_____ MGD
Vol. to treatment	_____ MG
Vol. to storage	_____ MG
Vol. Land applied	_____ MG/year
BOD5	_____ mg/l
COD	_____ mg/l
TOC	_____ mg/l
TSS	_____ mg/l
Percent Solids	_____ %
pH	_____ S.U.
Alkalinity as CaCO3	_____ mg/l
Nitrogen, (Nitrate)	_____ mg/l
Nitrogen, (Ammonium)	_____ mg/l
Nitrogen, (Total Kjeldahl)	_____ mg/l
Phosphorus, (Total)	_____ mg/l
Potassium, (Total)	_____ mg/l
Sodium	_____ mg/l

- b. *Sludge - Provide at least one analysis for each parameter. Upon review, additional analyses may be required by DEQ. See Discussion of Data, attached*

Parameter	Concentration*
Percent Solids	90%
Volatile Solids	<10%
pH	4.0 S.U.
Alkalinity as CaCO3**	<5275 mg/kg
Nitrogen (Nitrate)	21 mg/kg
Nitrogen (Ammonium)	900 mg/kg
Nitrogen (Total)	4,100 mg/kg
Phosphorous (as P ₂ O ₅)	1,000 mg/kg
Potassium (as K ₂ O)	300 mg/kg
Lead	7.8 mg/kg
Cadmium	7.6 mg/kg
Copper	50.55 mg/kg
Nickel	<12 mg/kg
Zinc	11.02 mg/kg
Calcium	1,400 mg/kg
Sulfur	500 mg/kg

Handwritten notes:
 - TAN 2, in previous analysis correct
 - Mtg on 5/1 That's correct
 - 500 394 2721
 - Total on form
 - Mtg of egr
 - went to there
 - 5-7-95 1985 Kin Spence
 - extras

** Unless otherwise noted, report results on dry weight basis.

Lime treated sludges (10% or more lime by dry weight) should be analyzed for percent CaCO₃.

- c. Provide a separate waste characterization listing for each wastewater and sludge generated at the facility. Insert "Yes" beside all parameters believed present and provide at least one analysis for each. Insert "No" beside all parameters believed not present. Indicate "NA" for any parameter already addressed in Item 4a. or 4b.

Parameter	Believed Present (yes or no)	Concentration*
Acidity	yes	80.8%
✓ Acrolein	no	
✓ Boron (Total)	yes	0.1 mg/kg
✓ Bromide	no	
✓ Chlorine (P.C.)	no	
✓ Dioxin	no	
Est. CEC	yes	4.8 meg/100g
✓ Fecal Coliform	yes	<200 MPN/gram
✓ Fluoride	no	
✓ Iron (Total)	yes	243.1 mg/kg
pH	yes	4.0 mg/kg
✓ Oil & Grease	yes	<1074 mg/kg
Organic Matter	yes	4.8%
✓ Radioactivity (Total)	no	
✓ Sodium	yes	5.12 mg/kg
S. Salts	yes	499 mg/kg
✓ Sulfate (as SO ₄)	no	
✓ Sulfide (as S)	no	
✓ Sulfite (as SO ₃)	no	
✓ Surfactants	no	
✓ Total Alpha	no	
✓ Total Aluminum	yes	3,629.4 mg/kg
✓ Total Antimony	no	
✓ Total Arsenic	no	
✓ Total Barium	no	
✓ Total Beryllium	no	
✓ Total Beta	no	
✓ Total Cadmium	no	
✓ Total Chromium	yes	<25 mg/kg
✓ Total Cobalt	yes	2.5 mg/kg
✓ Total Copper	no	
✓ Total Cyanide	no	
✓ Total Lead	no	
✓ Total Magnesium	yes	300 mg/kg
✓ Total Manganese	yes	7.13 mg/kg
✓ Total Molybdenum	no	
✓ Total Mercury	no	
✓ Total Nickel	no	
✓ Total Phenols	no	
✓ Total Radium	no	
✓ Total Radium 226	no	
✓ Total Residual	no	
✓ Total Selenium	no	
✓ Total Silver	no	
✓ Total Thallium	no	
✓ Total Tin	no	
✓ Total Titanium	no	
✓ Total Zinc	no	

PHI... units
- previously said yes
- value under total
- salts listed
mg/kg + ppm same
units

different from
previously reported
value
Antimony new figure
not believed present
also sulfate

* If the analysis is for sludge, report results on dry weight basis.

c. (Continued)

<u>Parameter</u>	<u>Believed Present</u> (yes or no)	<u>Concentration</u> Unless indicated, all other parameters are "NO" or "NA"
Acrylonitrile	_____	_____
Benzene	_____	_____
Bis(Chloromethyl)Ether	_____	_____
Bromoform	_____	_____
Carbon Tetrachloride	_____	_____
Chlorobenzene	_____	_____
Chlorodibromomethane	_____	_____
Chloroethane	_____	_____
2-Chloroethylvinyl Ether	_____	_____
Chloroform	_____	_____
Dichlorobromomethane	_____	_____
Dichlorodifluoromethane	_____	_____
1,1-Dichloroethane	_____	_____
1,2-Dichloroethane	_____	_____
1,1-Dichloroethylene	_____	_____
1,2-Dichloropropane	_____	_____
1,3-Dichloropropylene	_____	_____
Ethylbenzene	_____	_____
Methyl Bromide	_____	_____
Methyl Chloride	_____	_____
Methylene Chloride	_____	_____
1,1,2,2-Tetrachlorethane	_____	_____
Tetrachloroethylene	_____	_____
Toluene	_____	_____
1,2-TransDichloroethylene1	_____	_____
1,1,-Trichloroethane	_____	_____
1,1,2,-Trichloroethane	_____	_____
Trichloroethylene	_____	_____
Trichlorofluoromethane	_____	_____
Vinyl Chloride	_____	_____
2-Chlorophenol	_____	_____
2,4-Dichlorophenol	_____	_____
2,4-Dimethylphenol	_____	_____
4,6-Dinitro-O-Cresol	_____	_____
2,4-Dinitrophenol	_____	_____
2-Nitrophenol	_____	_____
4-Nitrophenol	_____	_____
P-Chlor-M-Cresol	_____	_____
Pentachlorophenol	_____	_____
Phenol	_____	_____
2,4,6-Trichlorophenol	_____	_____
Acenaphthene	_____	_____
Acenaphthylene	_____	_____
Acenaphthylene	_____	_____
Benzidine	_____	_____
Benzo(a)Athrane	_____	_____
Benzo(a)Pyrene	_____	_____
3,4-Benzofluoranthene	_____	_____
Benzo(ghi) Perylene	_____	_____
Benzo(k)Fluoranthene	_____	_____
Bis(2-Chloroethoxy)Methane	_____	_____
Bis(2-Chloroethyl) Ether	_____	_____
Bis(2-Chloroisopropyl)Ether	_____	_____
Bis(2-Ethylhexyl)Pnthalate	_____	_____
4-Bromophenyl Phenyl Ether	_____	_____
Butyl Benzyl Phthalate	_____	_____
4-Chlorophenyl Phenyl Ether	_____	_____
2-Chloronaphthalene	_____	_____
Chrysene	_____	_____
Dibenzo(a,h) Anthracene	_____	_____

c. (Continued)

<u>Parameter</u>	<u>Believed Present</u> (yes or no)	<u>Concentration</u> Unless indicated, all other parameters are "NO" or "NA"
1,2-Dichlorobenzene	_____	_____
1,3-Dichlorobenzene	_____	_____
1,4-Dichlorobenzene	_____	_____
3,3'-Dichlorobenzidine	_____	_____
Diethyl Phthalate	_____	_____
Dimethyl Phthalate	_____	_____
Di-N-Butyl Phthalate	_____	_____
2,4-Dinitrotoluene	_____	_____
2,6-Dinitrotoluene	_____	_____
Di-N-Octyl Phthalate	_____	_____
1,2-Diphenylhydrazine(as	_____	_____
Azobenzene)	_____	_____
Fluoranthene	_____	_____
Fluorene	_____	_____
Hexachlorobenzene	_____	_____
Hexachlorobutadiene	_____	_____
Hexachlorocyclopentadiene	_____	_____
Hexachloroethane	_____	_____
Indeno(1,2,3-cd)Pyrene	_____	_____
Isophorone	_____	_____
Naphthalene	_____	_____
Nitrobenzene	_____	_____
N-Nitrosodimethylamine	_____	_____
N-Nitrosodi-N-Propylamine	_____	_____
N-Nitrosodiphenylamine	_____	_____
Phenanthrene	_____	_____
Pyrene	_____	_____
1,2,4 - Trichlorobenzene	_____	_____
Aldrin	_____	_____
a- BHC	_____	_____
a- BHC	_____	_____
a- BHC	_____	_____
a- BHC	_____	_____
Chlordane	_____	_____
4,4'- DDT	_____	_____
4,4'- DDE	_____	_____
4,4'- DDD	_____	_____
Dieldrin	_____	_____
a-Endosulfan	_____	_____
a-Endosulfan	_____	_____
Endosulfan Sulfate	_____	_____
Endrin	_____	_____
Endrin Aldehyde	_____	_____
Heptachlor	_____	_____
Heptachlor Epoxide	_____	_____
PCB - 1242	_____	_____
PCB - 1254	_____	_____
PCB - 1221	_____	_____
PCB - 1232	_____	_____
PCB - 1248	_____	_____
PCB - 1260	_____	_____
PCB - 1016	_____	_____
Toxaphene	_____	_____
Chloromethane	_____	_____
Chlorpyrifos	_____	_____
Demeton	_____	_____
Dichloromethane	_____	_____
(2,4-dichlorophenoxy) acetic	_____	_____
acid (2,4-D)	_____	_____
Di-2-Ethylhexyl Phthalate	_____	_____
MBAS	_____	_____

c. (Continued)

<u>Parameter</u>	<u>Believed Present</u> (yes or no)	<u>Concentration</u>
Lindane	_____	Unless indicated, all other parameters are "NO" or "NA"
Hydrogen Sulfide	_____	
Silvex	_____	
Tributyltin	_____	
Kepone	_____	
Malathion	_____	
Methoxychlor	_____	
Mirex	_____	
Monochlorobenzene	_____	
Parathion	_____	

d. Provide a separate waste characterization listing for each wastewater and sludge generated at the facility. List any additional parameters believed present in the spaces provided below and provide at least one analysis for each.

[illegible]

- Briefly describe the design and provide a line drawing of the waste treatment facility which relates the various components of the treatment system including source(s), treatment unit(s), disposal alternatives, and flow estimates from the various process units.

The two treatment ponds are in series. The first pond is designed to reduce BOD using indigenous bacteria. The second pond is designed to reduce ammonia using both indigenous and augmented bacteria. Each pond holds approximately 3 million gallons. The holding basin is designed to store sludge until it can be land applied or other suitable means of disposal. The holding basin holds approximately 50,000 cubic feet. Sludge is manually removed with mechanical excavators from the pond and placed in the holding basin.

6. Indicate the number and type of waste storage facilities. If existing, indicate the volume; DEQ may require additional information upon review.

No.		Existing (Volume)	Proposed
<u>1</u>	<u>WSP</u> Earthen Storage Pond		
<u>1</u>	Storage Pit	50,000 cu. Ft.	
	Anaerobic Lagoon		
	Other		

7. Have the existing storage/treatment facilities identified in Item 5 and 6 above been previously approved by the Department of Environmental Quality?

Yes XX No

If yes, provide the date of the approval and proceed to Item 8.

Approval Date: 1984 and 2005

If no, provide information required by Items 9, 10, and 11.

8. Have the previously approved facilities been altered or expanded?

Yes No XX

If yes, it will be necessary to provide the information for such facilities, as required by Items 9 & 10, and 11.

If no, proceed to Item 12.

9. Provide conceptual design for the treatment facilities including design approach used. Explain how ground water will be protected. Demonstration should include soil evaluation, geology, hydrology, and topography. The following information must be provided for each proposed facility identified in Item 6 above and for those existing facilities in Items 7 and 8 which have not been either previously approved or were altered:

- Design calculations for volume (ft³) and estimated days of storage
- Description of lining material and permeability
- Plan and cross-sectional views
- Depth to seasonal high water table and separation to permanent water table.

10. Will the proposed waste storage/treatment facilities be located within the 100-year flood plain? Yes _____ No no

If yes, what is the elevation of the 100-year flood plain and elevation of the proposed facilities. Also, how will the waste storage facilities be protected from flooding? (Flood elevation can be obtained from your local county zoning/planning department).

11. Will the proposed or existing storage/treatment facilities receive any storm water runoff? Yes _____ No no

If yes, provide total area (square feet, acres, etc.) from which runoff will occur and indicate this area on the line drawing (Item 5).

Total area: _____
Dimensions: _____

12. Will any part of the waste generated at your facility be land applied? Yes xx No _____ If yes, Part C-II must be completed.

VIRGINIA POLLUTION ABATEMENT PERMIT APPLICATION

FORM C

INDUSTRIAL WASTE

PART C-II Land Application and Waste Handling Procedure

Facility Name: Omega Protein, Inc.

Items 1-12 pertain to the land application of industrial sludge/wastewater at frequent and infrequent rates. The applicant may request a waiver in writing for any of the required information if it is not pertinent to their operation.

1. For each land application site provide a topographic map of sufficient scale (5 foot contour preferred) clearly showing the location of the following features within 0.25 mile of the site. Provide a legend with approximate scale. (See attached Boundary map.)
 - a. Proposed or existing ground water monitoring wells *Four wells surround the Net Facility*
 - b. General direction of ground water movement *TOWARD THE SURFACE WATER*
 - c. Water wells, abandoned or operating *All water wells are shown on the attached boundary map*
 - d. Surface water *SHOWN*
 - e. Springs *NONE*
 - f. Public water supply(s) *NONE*
 - g. Sink holes *NONE*
 - h. Underground and/or surface mines *NONE*
 - i. Mine pool (or others) surface water discharge points *NONE*
 - j. Mining spoil piles and mine dumps *NONE*
 - k. Quarry(s) *NONE*
 - l. Sand and gravel pits *NONE*
 - m. Gas and oil wells *NONE*
 - n. Diversion ditch(s) *NONE*
 - o. Agricultural drainage ditch(s) *NONE*
 - p. Occupied dwellings, including industrial and commercial establishments *SHOWN*
 - q. Landfills or dumps *NONE*
 - r. Other unlined impoundments *NONE*
 - s. Septic tanks and drainfields *NONE*
 - t. Injection wells *NONE*
 - u. Rock outcrops *NONE*
 - v. Soil boring or test pits locations *NONE*
 - w. Subsurface drainage tile *NONE*

2. For each land application site provide a site plan of sufficient detail to clearly show any landscape features which will require buffer zones or may limit land application. Provide a legend and clearly mark the field boundaries and property lines. The following landscape features should be delineated. (Required buffers are shown on the boundary map)
 - a. *Drainageways* SHOWN
 - b. *Rock outcrops* NONE
 - c. *Sink holes* NONE
 - d. *Drinking water wells and springs* NONE
 - e. *Monitoring wells* NONE
 - f. *Property lines* Shown
 - g. *Roadways* SHOWN
 - h. *Occupied dwellings* SHOWN
 - i. *Slopes (greater than 8% by slope class)* NONE
 - j. *Wet spots* None
 - k. *Severe erosion (SCS designation)* NONE
 - l. *Frequently flooded soils (SCS designation)* NONE
 - m. *Surface waters* SHOWN
3. Provide a complete description of agronomic practices for each crop to be grown, on field-by-field basis including a nutrient management program, soil and/or plant tissue testing, and the coordination of tillage practices, planting and harvesting schedules and timing of land application. SEE SUPPLEMENT TO PAGE C-II.2
4. Describe all land application methods and any equipment used in the process. See Supplement
5. Provide a detailed soil survey map, preferably photographically based, with the field boundaries clearly marked. (A USDA-SCS soil survey map should be provided, if available.) PROVIDED

Provide a detailed legend for each soil survey map which uses accepted USDA-SCS descriptions of the typifying pedon for each soil series (soil type). Complex associations may be described as a range of characteristics. Soil descriptions should include the following information. SEE USDA ATTACHMENT

- a. *Soil symbol*
- b. *Soil series, textural phase and slope class*
- c. *Depth to seasonal high water table*
- d. *Depth to bedrock*
- e. *Estimated productivity group (for the proposed crop rotation).*
- f. *Estimated infiltration rate (surface soil)*
- g. *Estimated permeability of most restrictive subsoil layer*

6. Representative soil borings for frequent land application and fixed spray irrigations, (to no less than 5 ft. or to the water table) are to be conducted for the typifying pedon of each soil series (soil type) and the following data collected and tests performed. All results for infiltration and permeability tests should be enclosed. Provide information on the items below: See report by Swift Creek Environmental, Inc.
 - a. *Soil symbol*
 - b. *Soil series, textural phase and slope class*
 - c. *Depth to seasonal high water table*
 - d. *Depth to bedrock*
 - e. *Estimated productivity group (for the proposed crop rotation).*
 - f. *Estimated infiltration rate (surface soil)*
 - g. *Estimated permeability of most restrictive subsoil layer*
7. Representative soil samples are to be collected for each major soil type and analyzed for the soil parameters indicated on Page C-II-6. Samples are to be taken at a depth of 0-6 in.
SEE ATTACHMENT
8. Land Area Determination:
 - a. *Land area requirements are to be calculated and justified for each of the parameters listed below: SEE SUPPLEMENT TO PAGE C-II.3*

<u>Parameters</u>	<u>Method of Determining Required Area</u>
1. Nitrogen	Crop uptake, immobilization denitrification, leaching
2. Phosphorus	Crop uptake, soil adsorption
3. Potassium	Crop uptake
4. Sulfur	Crop uptake, soil adsorption leaching
5. Salts	Sodium Adsorption Ratio (SAR), leaching
6. Carbon/Nitrogen Ratio	
7. Metals (Ni, Cu, Zn, Pb, Co, Cd or other)	Cumulative loading for site life
8. Anions (As, B, Chlorides)	Leaching, Soil Adsorption
9. Calcium Carbonate Equivalency	Soil pH management
10. Other Parameters (As needed or as requested by DEQ)	

For each parameter and method of assimilation, (i.e. crop uptake, denitrification, immobilization, soil adsorption leaching, etc.), the required land area is to be justified by attaching calculations and appropriate references. Allowances for soil adsorption are to be justified by pertinent soil testing.

Provide calculations describing the nutrient value of the waste as lbs per dry ton or mg/l nitrogen (PAN), phosphorus (P₂O₅), potassium (K₂O), and any liming effects which may occur from land application.

- b. Land area requirements for application of industrial wastewater or liquid sludge are to be determined and an annual water balance on a monthly basis developed integrating the following factors: **NA**

1. Monthly precipitation
2. Monthly evapotranspiration data
3. Soil percolation rates (from subsurface permeability data)
4. Monthly wastewater loading
5. Monthly storage requirement
6. Monthly storage input/drawdown

9. Does the volume of wastewater generated as determined by the water balance in 8.b. exceed the hydraulic loading rate (inches/acre/year) of the soils? Yes _____ N _____

If Yes, explain how excess loading will be disposed of:

NA

10. Is the land application site owned by the applicant? Yes x No _____

If No, answer question 11 and have the land owner complete the authorization form, Page C-II-5.

11. Complete page C-II.5 by providing the name(s), address(es), site locations and signatures of non-applicant land owner on whose property industrial waste will be applied (A separate approval will be required for each additional owner.): **NA**

AUTHORIZATION TO LAND APPLY WASTE
(Land Owner must sign and date this approval)

As land owner, I authorize Omega Protein to land apply wastewater/sludge to my property in accordance with their VPA Form C application. This authorization will remain in effect until such time as I notify the Department of Environmental Quality in writing that this authorization has been withdrawn.

Name: Robert LaBruzzo

Address: Highway 659
Reedville, VA 22539

Telephone: 804-453-4211

Site Location(s) Omega Protein, Inc., Reedville, VA

Date: April 3, 2008

Signature: Robert LaBruzzo

SOIL SAMPLE TEST PARAMETERS FOR LAND APPLICATION SITES¹

Industrial Operations	Sludge Freq. Below Ag. Rates ²	Sludge Freq. at Ag. Rate ³	Sludge Infrequent	Wastewater
Soil Organic Matter (%)		*		*
Soil pH (Std. Units)	*	*	*	*
Cation Exchange Capacity (meq/100g)	*	*	*	*
Total Nitrogen (ppm)		*		*
Organic Nitrogen (ppm)		*		*
Ammonia Nitrogen (ppm)		*		*
Nitrate Nitrogen (ppm)		*		*
Available Phosphorus (ppm)	*	*	*	*
Exchangeable Potassium (mg/100g)	*	*	*	
Exchangeable Sodium (mg/100g)		*		*
Exchangeable Calcium (mg/100g)		*		*
Exchangeable Magnesium (mg/100g)		*		*
Copper (ppm)		*		*
Nickel (ppm)		*		*
Zinc (ppm)		*		*
Cadmium (ppm)		*		*
Lead (ppm)		*		*
Chromium (ppm)		*		*
Manganese (ppm)		*		*
Particle Size Analysis or USDA Textural Estimate (%)		*		*
Hydraulic Conductivity (in/hr)				*

NOTE: ¹ Unless otherwise stated, analysis shall be reported on a dry weight basis.
² Less than 70% of agronomic nitrogen rates (annual basis).
³ Test requirements will be adjusted based on previous test results
* Test for these parameters.

Discussion of Data, Page C-I.3, Item 4 b.
Omega Protein

The attached spreadsheet presents a summary of all analyses performed on the sludge. Actual data sheets are also attached.

In June 2005, analyses were performed on the black, un-desiccated sludge by Patton Harris Rust & Associates (PHRA) shortly after the sludge was placed in the holding basin. PHRA has performed VPDES analyses for many years.

Over the next twelve months, the sun dried the upper 9 inches of sludge to a brown soil-like material that was much more manageable with regard to land application, meaning that normal construction equipment could be used. Grass and weeds grew on the surface, obviously uptaking nutrients. Therefore, it made sense to sun-dry all the sludge before land application and to re-analyze for nutrients.

Samples were taken from each corner of the holding basin and a composite was made by taking equal size samples from each of the corners. The composite sample was split and sent to PHRA and Virginia Cooperative Extension for analysis. The corner samples were sent to PHRA for additional nutrient analysis.

When comparing the data on the composite sample, there was some agreement and some disagreement between the two labs. Since the Va. Co-op lab performs these analyses more regular than PHRA, preference was granted to the Co-op results. For consistency, the nutrient numbers from Clemson that DCR used for the NMP were used. The data we selected is shown on the spreadsheet as "boxed".

Suspecting that heat from the sun might have effected fecal coliform (from wildlife), we re-analyzed the dried soil-like sludge for fecal coliform and received a lower value of <200 MPN/gram.

[illegible]

ANIMAL WASTE ANALYSIS REPORT

Agricultural Service Laboratory

Clemson University

LAB No. 101313

OMEGA, PROTEIN

P O BOX 175

REEDVILLE VA

22539

ACCOUNT 1001703

DATE 10-27-2006

ROBERT.WARING@DCR.VIRGINIA.GOV

CONSULTANT ROBERT WARING VADCR

SAMPLE NO. FALL2006

MANURE: OTHER INTEGRATOR: STORAGE: UNCOVERED

-----RESULTS REPORTED ON AN AS-SAMPLED BASIS-----

ANALYST					lbs/ton
pj	Ammonium Nitrogen	0.09	%	900	1.80
pj	Total Nitrogen	0.41	%	4,100	8.15

dw/km	Phosphorus as P2O5	0.10	%	1000 ppm	2.08
dw/km	Potassium as K2O	0.03	%	300 ppm	0.62
dw/km	Calcium	0.14	%	1,400 ppm	2.85
dw/km	Magnesium	0.03	%	300	0.52
	Sulfur	0.05	%	500	0.91
	Zinc	11.02	ppm		0.02
	Copper	50.55	ppm		0.10
	Manganese	7.13	ppm		0.01
	Sodium	51.20	ppm		0.10
	Aluminum	3629.40	ppm		7.26
jp	Moisture	35.19	%		

All of the potash in the animal waste should be plant available in the first year of application. Although not all of the phosphorous is available in the first year, its availability should be comparable to that in commercial fertilizers.

The rate of animal waste to apply for crop production is dependent on the nutrient content of the waste, method of application and incorporation, soil test, crop to be grown, and previous manure applications. In most cases, the plant available nitrogen content of the waste is used to determine the rate of application.

APPROVED BY

Analysis performed in accordance with Clemson Laboratory Manure Analysis procedures, February, 2004.

Manure analysis in Virginia is funded by the Dept. of Conservation and, Recreation, Div. of Soil and Water Conservation.

The Agricultural Service Laboratory is a public service of Clemson University, an equal opportunity educational institution: <http://www.clemson.edu/agsrvlb>

Virginia Cooperative Extension

Soil Test Report

Northumberland County Office
P.O. Box 400
Heathsville, VA 22473-0400
804-580-5694

Virginia Tech Soil Testing Laboratory
145 Smyth Hall (0465)
Blacksburg, VA 24061
www.soiltest.vt.edu

SEE ENCLOSED NOTES:
1 3

JETT LYELL
OMEGA PROTEIN
P O BOX 175
REEDVILLE, VA 22539

BILL BLACK
401 STUDEWOOD STE 208
HOUSTON, 77007

This is Lagoon sludge

Sample ID	Field ID	LAST CROP		LAST LIME APPLICATION		SOIL INFORMATION				
		Name	Yield	Months Prev.	Tons/Acre	SMU-1 %	SMU-2 %	SMU-3 %	Yield Estimate	Productivity Group
LAGOON	LAGOON			---	0	MAA 100				II

LAB TEST RESULTS (see Note 1)

Analysis	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)	Salts (ppm)
Result	95	40	240	68	2.3	2.0	31.1	243.1	0.1	499
Rating	H+	L	L-	L+	SUFF	SUFF	SUFF	SUFF	SUFF	M

Analysis	Soil pH	Buffer pH	Est.-CEC (meq/100g)	Acidity (%)	Base Sat (%)	Ca Sat (%)	Mg Sat (%)	K Sat (%)	Organic Matter (%)
Result	4.0	5.74	4.8	80.8	19.2	12.4	5.8	1.1	4.8

FERTILIZER AND LIMESTONE RECOMMENDATIONS

rop: Orchardgrass/Fescue-Clover Pasture (40)

Lime, TONS/AC		Fertilizer, lb/A		
Amount	Type	N	P2O5	K2O
3.5	AG	50	0	110

635. No further crop response is expected when applying more than 2 to 3 T/A of lime in one application. Therefore, apply half of the total lime now, and the remainder in 6 to 12 months.

825. If stand contains less than 25 per cent clover, apply 40-60 lbs N/A.

131. If additional production is needed later on, apply 40 to 60 lbs/A of N during the grazing season. If you are planning to overseed a legume into the stand, omit the N recommendation.

22. P2O5 and K2O recommendations are for annual application. However, rates can be doubled and applied every other year if desired.

77. Soluble Salts are not high enough to cause salt injury.

Virginia Cooperative Extension

Soil Test Report

Northumberland County Office
P.O. Box 400
Heathsville, VA 22473-0400
804-580-5694

Virginia Tech Soil Testing Laboratory
145 Smyth Hall (0465)
Blacksburg, VA 24061
www.soiltest.vt.edu

SEE ENCLOSED NOTES:
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R

JETT LYELL
OMEGA PROTEIN
P O BOX 175
REEDVILLE, VA 22539

C F
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P R
Y

BILL BLACK
401 STUDEWOOD STE 208
HOUSTON, 77007

SAMPLE HISTORY									
Sample ID	Field ID	LAST CROP		LAST LIME APPLICATION		SOIL INFORMATION			
		Name	Yield	Months Prev.	Tons/Acre	SMU-1 %	SMU-2 %	SMU-3 %	Yield Estimate
AIRFD	AIRFIELD			---	0				III

LAB TEST RESULTS (see Note 1)										
Analysis	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)	Salts (ppm)
Result	4	38	313	54	1.1	0.8	0.3	43.6	0.1	38
Rating	L	L	L	L+	SUFF	SUFF	SUFF	SUFF	SUFF	L

Analysis	Soil pH	Buffer pH	Est.-CEC (meq/100g)	Acidity (%)	Base Sat. (%)	Ca Sat. (%)	Mg Sat. (%)	K Sat. (%)	Organic Matter (%)
Result	5.1	6.00	3.4	69.3	30.7	22.8	6.5	1.4	2.2

FERTILIZER AND LIMESTONE RECOMMENDATIONS

p: Orchardgrass/Fescue-Clover Pasture (40)

Lime, TONS/AC		Fertilizer, lb/A		
Amount	Type	N	P2O5	K2O
2	AG	50	50	70

90. Soil Survey map unit information was not provided, neither was a field Yield estimate. As a result only generalized fertilizer recommendations could be made. Field specific and more scientifically-based recommendations can be provided if soil map unit information is included in the future. Contact your extension agent to learn how to obtain available soil survey information for your farm.

15. If stand contains less than 25 per cent clover, apply 40-60 lbs N/A.

1. If additional production is needed later on, apply 40 to 60 lbs/A of N during the grazing season. If you are planning to overseed a legume into the stand, omit the N recommendation.

2. P2O5 and K2O recommendations are for annual application. However, rates can be doubled and applied every other year if desired.

3. Soluble Salts are not high enough to cause salt injury.

Virginia Cooperative Extension

Soil Test Report

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SEE ENCLOSED NOTES:

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401 STUDEWOOD STE 208
HOUSTON, 77007

SAMPLE HISTORY										
Sample ID	Field ID	LAST CROP		LAST LIME APPLICATION		SOIL INFORMATION				
		Name	Yield	Months Prev.	Tons/Acre	SMU-1 %	SMU-2 %	SMU-3 %	Yield Estimate	Productivity Group
NETHS	NET HOUSE			---	0	MAA 100				II

LAB TEST RESULTS (see Note 1)										
Analysis	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)	Salts (ppm)
Result	20	22	182	36	1.1	1.9	1.7	47.5	0.1	64
Rating	M-	L	L-	L	SUFF	SUFF	SUFF	SUFF	SUFF	L

Analysis	Soil pH	Buffer pH	Est.-CEC (meq/100g)	Acidity (%)	Base Sat (%)	Ca Sat (%)	Mg Sat (%)	K Sat (%)	Organic Matter (%)
Result	5.0	6.11	2.4	73.2	26.8	19.3	6.3	1.2	2.0

FERTILIZER AND LIMESTONE RECOMMENDATIONS

rop: Orchardgrass/Fescue-Clover Pasture (40)

Lime, TONS/AC		Fertilizer, lb/A		
Amount	Type	N	P2O5	K2O
1.5	Dolomitic	50	90	110

825. If stand contains less than 25 per cent clover, apply 40-60 lbs N/A.

131. If additional production is needed later on, apply 40 to 60 lbs/A of N during the grazing season. If you are planning to overseed a legume into the stand, omit the N recommendation.

122. P2O5 and K2O recommendations are for annual application. However, rates can be doubled and applied every other year if desired.

577. Soluble Salts are not high enough to cause salt injury.

A+L lab
Richard
804 743 9401

462 5780
Barbara



FROEHLING & ROBERTSON, INC
GEOTECHNICAL • ENVIRONMENTAL • MATERIALS
ENGINEERS • LABORATORIES
"OVER ONE HUNDRED YEARS OF SERVICE"

CERTIFICATE OF ANALYSIS

July 06, 2006

Page 1 of 1

LAB #: 0606352
CLIENT: Omega Protein, Inc
P.O. Box 175
Reedville VA, 22539
Ted Schultz
PROJECT: PHRA
PROJECT NO.:
SAMPLED BY: Bill Black
RECEIVED: 06/15/06

<u>PARAMETER</u>	<u>PREP DATE/TIME</u>	<u>ANALYSIS DATE/TIME</u>	<u>METHOD</u>	<u>ANALYST</u>
Boron	6/22/06 10:00	7/5/06 11:04	SW846/6010	JLW
Cobalt	6/22/06 10:00	6/29/06 14:44	SW846/6010	JLW
Molybdenum	6/22/06 10:00	6/29/06 14:44	SW846/6010	JLW
Sodium	7/5/06 8:00	7/5/06 13:07	SW846/6010	JLW

LAB #	0606352-01					
SAMPLE ID	06-405, Corner Basin					
DATE/TIME	05/25/06					
MATRIX	Soil					
					Quant	
Metals (Soil)					Limit:	Units
Boron	17				1	mg/kg dry
Cobalt	2.5				0.5	mg/kg dry
Molybdenum	<0.5				0.5	mg/kg dry
Sodium	136				50	mg/kg dry

Notes and Definitions

mg/L = milligrams per Liter

µg/L = micrograms per Liter

BQL = Below the Quantitation Limit

mg/kg = milligrams per kilogram

ppm = parts per million

CFU/mL = Colony forming units per milliliter

su = standard units

NTU = Nephelometric Turbidity Units

MPN/100 mL = Most Probable Number per 100 milliliters

Audrey Brubeck
Manager Analytical Laboratory Services

HEADQUARTERS: 3015 DUMBARTON ROAD • BOX 27524 • RICHMOND, VA 23261-7524
TELEPHONE (804) 264-2701 • FAX (804) 264-1202 • WWW.F&R.COM

BRANCHES: ASHEVILLE, NC • BALTIMORE, MD • CHARLOTTE, NC • CHESAPEAKE, VA
CROZET, VA • FAYETTEVILLE, NC • FREDERICKSBURG, VA
GREENSBORO, NC

CERTIFICATIONS:

VIRGINIA DRINKING WATER - 00153
NORTH CAROLINA DENR - 432
SOUTH CAROLINA DENR - 0000000000

Patton Harris Rust & Associates, pc

Engineers, Surveyors, Planners, Landscape Architects.

(540) 898-2115

Omega Protein

Date	Station	Oil & Grease	Chlorides	Total Phosphorus	Ammonia -N	TKN	Nitrites-N	Nitrates-N	Total Nitrogen
		(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)	(mg/Kg)
5/25/2006	NW Corner Basin			54.8	276	1872	<2.24	26.5	1900
	SW Corner Basin			36.0	425	1590	<2.17	<21.7	1614
	NE Corner Basin			97.8	649	2047	<2.15	<21.5	2071
	SE Corner Basin			51.8	432	1655	<2.27	<22.7	1680
	Composite	<1074	<215	43	385	1467	<2.15	<21.5	1491
				Metals					
		Potassium (mg/kg)	Calcium (mg/kg)	Magnesium (mg/kg)	Copper (mg/kg)	Iron (mg/kg)	Manganese (mg/kg)	Zinc (mg/kg)	
5/25/2006	NW Corner Basi	700							
	SW Corner Basi	310							
	NE Corner Basi	323							
	SE Corner Basi	257							
	Composite	316	17.4	161	7.52	14350	17	35.2	

Patton Harris Rust & Associates, pc

Engineers. Surveyors. Planners. Landscape Architects.

P.O. Box 781
150-C Olde Greenwich Drive
Fredericksburg, VA 22404

T 540.898.2115
F 540.898.3230

Omega Protein March, 2006

Special Sample

Date	Station	Fecal Coliform (MPN/100mL)
3/3/2006	Soil Sample	<200

Dried sludge

Supplement to Virginia Pollution Abatement Permit Application, Page C-II.2, Questions #3 & #4
March 26, 2008 revised

The three areas- Net Facility, Airfield and former SeaSoast-have contained only grass for a large number of years. Considering the required buffers, the available land for application has been calculated to be Net Facility 13.1 acres, Airfield 9.1 acres and SeaCoast 5.9 acres. The basis of these calculations is shown on the attached boundary map. It has not been Omega's practice to apply any fertilizer to these areas. Omega intends to apply the dried sludge once per year in the early spring, when the grass first begins to grow. The airplanes don't use the airfield until May.

The dried soil-like sludge would be transported in dump trucks. The trucks would not be lined because the moisture content is less than 10% so there is no free water. Once dumped, the soil would be spread by front end loaders and/or bull dozers. The dumping would be controlled whereby a truck of given capacity would have a calculated area marked on the grass. For example, trucks are typically 16 yards capacity, 16 yards is equal to $16 \times 65 = 1040$ pounds. 1040 divided by $3.5 \text{ lbs/ft}^2 = 297$ square feet or an area about 17 feet by 17 feet.

Regarding the supply of sludge, there is approximately 50,000 cubic feet of wet sludge in the holding basin. The sludge was removed from the industrial treatment pond in early 2005. We anticipate removing sludge from the treatment pond about every 5 years. At 65 lbs/cubic foot, (sludge that has been dried and has a moisture content of 10%), there is 1462.5 dry tons of sludge to be spread. The controlling PAN/DT is 21.7 dry tons per acre. A total of 289 dry tons would be applied over 13.1 acres.

The limit of 15 dry tons per acre for the Airfield (9.1 acres) and SeaCoast property (5.9 acres). The total of 289 dry tons applied at the Net Facility and the 136 dry tons applied over the Airfield and 88.5 over the SeaCoast property. The limit of 15 dry tons per acre is not a limit at the Net Facility since we have installed monitoring wells so to monitor the groundwater. Total application is shown in the table below. If the first application was in 2008, the holding basin would be empty by late 2010, ready to receive new sludge if it was determined that new sludge needed to be removed by then. Omega doesn't anticipate removing more sludge from the treatment ponds before the year 2010.

If the Net House is limited to 15 dry tons per acre per year, then:

Area	App Rate	Year 1	Year 2	Year 3
Net House	21.7	284 DT	284 DT	284 DT
Airfield	15 DT/acre	136	136	74.5
SeaCoast	15	<u>88</u>	<u>88</u>	<u>88</u>
Cumulative Totals		508	1016	1462.5

At the rate of 21.7 dry tons per acre, the cumulative loading of metals is shown on the attached spreadsheet. Thus, there is no limit for 106 plus years assuming no uptake by the grass.

The sodium adsorption ratio (SAR), using Na=51.2, Ca=1400 and Mg=300, is calculated to be 0.33, using the formula below, thus, no soil amendments are needed.

$$\text{SAR} = \text{Na}/23 \text{ mg/Meg divided by the square root of } [(\text{Ca}/20 \text{ mg/meg} + \text{Mg}/12 \text{ mg/meg})/2]$$

Add Aluminum

Supplement to Virginia Pollution Abatement Permit Application, Page C-II.3,
Question #8

March 25, 2008 revised

Agronomic Rates

Using the Virginia Cooperative Extension equation given in DEQ letter dated September 13, 2007 and available data, perform the applicable calculations.

Use fescue grass as the only crop.

Agronomic Nitrogen (N)

Fescue grass—use N = 120 lb/ac as needed loading rate

Assume that N is very mobile. Therefore, other sources of N=0 because legumes have not been grown, N has not already been applied and previous waste has not been applied.

Therefore, the Adjusted N rate remains at 120 lb/ac.

Calculate PAN/dry ton for the first year of application. PAN is "plant available nitrogen".

$$\text{PAN/DT sludge} = 20[(F)(\% \text{ Org-N}) + (V)(\% \text{ NH}_3\text{-N})]$$

PAN=lbs of plant available N per dry ton of Biosolid

F = mineralization of organic nitrogen in sludge within the first year of application= 0.1

V = Amount of NH₃-N not volatilized as determined by: (1) the degree of incorporation and the waiting period before incorporation, at or following land application, and (2) the pH of the sludge = 0.5

Second year = PAN/DT Sludge – 0.05 * % Org N

Third year = PAN/DT Sludge – 0.03 * % Org. N

NH₃-N = 900 ppm = 0.09%

TKN = 4100

Org N = TKN-NH₃-N = 4100-900 = 3200

% Org N = 3200/10000 = 0.32%

PAN/DT Sludge = 20(0.1)(0.32) + 0.5(0.09) = 0.64 + 0.045 = 0.685 lbs/dry ton Sludge

Second Year = $PAN/DT - 0.05 * \% \text{ Org N} = 0.685 - (0.05)(0.32) = 0.669 \text{ lbs DT Sludge}$

Third year = $PAN/DT - 0.03 * \% \text{ Org N} = 0.685 - (0.03)(0.32) = 0.675 \text{ lbs DT Sludge}$

Adjusted N rate = $120 \text{ lbs/DT} / 0.685 \text{ lbs/DT} = 175 \text{ DT/ acre}$

Agronomic P rate

Agronomic P rate = $P_{\text{req}} / \text{Available } P_2O_5 / \text{dry ton}$

P_{req} = The P fertilizer recommended for the harvested crop or the quantity of P removed by the crop

Avail. $P_2O_5 = 0.5$ (total P_2O_5 /dry ton biosolids

Total P_2O_5 /dry ton = $\%P \text{ in biosolids} \times 20 \times 2.3$

$\% P = 1000 \text{ ppm} = 0.1\%$

$P_{\text{req}} = 50 \text{ lbs/acre}$ based on VA Co-op rating for the Airfield

Total $P_2O_5 /DT = 0.1 \times 20 \times 2.3 = 4.6$

Avail $P_2O_5 = 2.3 \text{ lbs/dry ton biosolids}$

Agronomic P rate = $50 / 2.3 = 21.7 \text{ dry tons/acre}$

The Agronomic N rate exceeds the P rate, thus the P rate controls

Potassium

All potassium in biosolids is available.

$\%K = 300 \text{ ppm} = 0.03\%$

Available $K_2O = \% K \text{ in biosolids} \times 20 \times 1.2 = 0.03 \times 20 \times 1.2 = 0.72$
 $= 0.72 \text{ lbs } K_2O / \text{dry ton biosolids}$

Assume K_2O x required = 70 lbs/acre based on VA Co-op rating for Airfield

Agronomic K rate = $70 \text{ lbs/acre} / .72 \text{ lbs/dry tons biosolids} = 97.2$

The Agronomic K rate exceeds the P rate, thus the P rate controls

Cumulative application of trace elements
Omega Protein

Revised March 2008

Trace Element	Maximum cumulative lbs/acre	Concentration of element mg/kg	amount of metals per acre if Sludge application rate = 15 dry tons/acre/year	Years until element is at maximum with no crop uptake	amount of metals per acre if Sludge application rate = 21.7 dry tons/acre/year	Years until element is at maximum with no crop uptake
cadmium	35	7.6	0.228	153.51	0.32984	106.11
copper	1340	50.55	1.5165	883.61	2.19387	610.79
lead	270	7.8	0.234	1153.85	0.33852	797.59
nickel	375	12	0.36	1041.67	0.5208	720.05
zinc	2500	11.02	0.3306	7562.01	0.478268	5227.19

1.56/acre = 1.12 kg/acre
 503 TON MAX. NUTR.
 Cu 39 31.4
 Pb 300 248
 Ni 17 15.2
 Zn 420 375
 Cd 150 133.9
 As 41 34.8
 Cumulative loading of metals
 kg/acre

Aluminum Loading Calculation from page 20 of Industrial Waste Application Guidance

Assume:

Estimated Sludge residuals Al (see below)	3,851 mg/kg dry wt.
Soil bulk density	1.31 gms/cc soil
Density of soil 6 in. x 1 acre	1.7857×10^6 lbs/ac/6 in.
Two Soils Al background concentration	6,760 mg/kg dry wt to 31,800 mg/kg dry wt
Loading limits	15 dry tons/acre and 21.7 dry tons/acre

Mass of Al/acre in the top 6 inches of soil:

$$\frac{6760 \text{ parts Al}}{10^6 \text{ lbs}} \times 1.7857 \times 10^6 \text{ lbs/acre/6 in} = 12,071 \text{ lb/acre}$$

$$31,800 \text{ parts Al} \times 1.7857 \times 10^6 \text{ lbs/acre/6 in} = 56,785 \text{ lb/acre}$$

Estimated Sludge Residuals Al:

The application of Alum to both ponds during the Winter 2008 added a total of 100 lbs Al. The Clemson analysis indicated an existing Al concentration of 3,629 mg/kg

Assuming that the next sludge removal will produce the same amount as the first removal, then 45,000 lbs dry wt sludge will have (worst case, all 100 lbs of Al added) 100 lbs.-- $100/45,000 = 222 \text{ mg/kg}$. Adding 222 to 3,629 = 3,851 mg/kg

Mass Loading in Aluminum in Top 6 inches of Soil:

$$15 \text{ dry tons} \times 2000 \text{ lbs/ton} \times \frac{3,851 \text{ mg/kg}}{10^6 \text{ soil}} = 115.5 \text{ lb/acre}$$

$$21.7 \text{ dry tons} \times 2000 \text{ lbs/ton} \times \frac{3,851 \text{ mg/kg}}{10^6 \text{ soil}} = 167.1 \text{ lb/acre}$$

Percent Increase in Aluminum in Top 6 inches of Soil for 15 dry ton loading:

1.0 % for the soil with the lowest Al levels

0.2 % for the soil with the highest Al levels

Percent Increase in Aluminum in Top 6 inches of Soil for 21.7 dry ton loading:

1.4 % for the soil with the lowest Al levels

0.3 % for the soil with the highest Al levels



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

PIEDMONT REGIONAL OFFICE

4949-A Cox Road, Glen Allen, Virginia 23060

(804) 527-5020 Fax (804) 527-5106

www.deq.virginia.gov

L. Preston Bryant, Jr.
Secretary of Natural Resources

David K. Paylor
Director

Gerard Seeley, Jr.
Regional Director

May 6, 2008

Omega Protein, Inc.
P.O. Box 175
Reedville, Virginia 22539

Attn: William Purcell, Environmental Director

RE: VPA Permit Issuance VPA01428

Dear Mr. *Bill* Purcell:

The VPA application for the sludge from the treatment lagoon has been technically reviewed and the following comments were generated:

Page C-I.3 4.b. The parameter and value you show listed as Total Nitrogen should be Total Kjeldahl Nitrogen. Please convert this figure as it will be used in PAN calculations.

Page C-I.4. #4.c. The pH shown is 4.0 mg/kg. Please verify.

Page C-II.2. #2 The roadway buffer is now applied at the Net Facility. Why does this buffer not apply to the Sea Coast and Air Strip properties? Please submit an 8 1/2 x 11 map indicating the exact areas to which sludge is proposed to be applied (considering applicable buffers), with the acreage for each location indicated.

Page C-II.3. #8. Please provide the previously requested sodium and chloride loadings, as specified in Form C #8 Land Area Determination.

- Supplement, March 2008 Revision 3—15 DT/A/yr is the maximum that is allowed by the NMP and the VPA permit. The time frame needs to be revised, or additional acreage must be added. What time frame would Omega propose for an application in 2008, since it is now May? How will this work logistically with plant operations?
- Supplement, March 25, 2008 Revised—TKN is shown here as 4100 mg/kg, but the 4100 mg/kg figure is actually Total Nitrogen. See Page C-I.3 4.b. comment, above. Also, the N requirement used is 120 lb/ac., but that is only true for the Net Facility and the Airstrip. The Seacoast Property N requirement is 100 lb/ac. according to the NMP. Please take this into consideration in your calculations.

Aluminum Loading Calculation—Loading Limits —

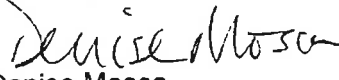
- 15 DT/A/yr is the maximum. Please take this into account in your calculations.
- The latest compliance schedule update indicated that alum addition was to continue at the lagoon. Calculations must account for the additional loading.
- Please confirm that this current batch of sludge in the sludge lagoon does not contain any aluminum and that these calculations are describing the next batch of sludge

Omega VPA, Page 2

- projected to be in the sludge lagoon in 2010.
- Where did the figure 45,000 lb dry wt sludge come from? The Supplement, March 2008 Revision 3 page describes 1462 DT/sludge, which converts to 2,925,000 lb dry wt sludge. Please be consistent in the sludge amounts used in calculations. Show how your number of dry tons was calculated.

If you have any questions regarding this matter, please contact me at 805-527-5027 or dmmosca@deq.virginia.gov.

Sincerely,


Denise Mosca
Environmental Specialist II

cc: W. Black, ENPRO

Mosca, Denise

From: Mosca, Denise
Sent: Tuesday, May 06, 2008 5:34 PM
To: bpurcell@omegaproteininc.com
Cc: bill@enprotexas.net
Subject: VPA Permit Issuance VPA01428 Comment Letter

A hard copy will follow by mail.--
Denise

May 6, 2008

Omega Protein, Inc.
P.O. Box 175
Reedville, Virginia 22539

Attn: William Purcell, Environmental Director

RE: VPA Permit Issuance VPA01428

Dear Mr. Purcell:

The VPA application submitted April 7, 2008 for the sludge from the treatment lagoon has been technically reviewed and the following comments were generated:

Page C-I.3 4.b. The parameter and value you show listed as Total Nitrogen should be Total Kjeldahl Nitrogen. Please convert this figure as it will be used in PAN calculations.

Page C-I.4. #4.c. The pH shown is 4.0 mg/kg. Please verify.

Page C-II.2. #2 The roadway buffer is now applied at the Net Facility. Why does this buffer not apply to the Sea Coast and Air Strip properties? Please submit an 8 ½ x 11 map indicating the exact areas to which sludge is proposed to be applied (considering applicable buffers), with the acreage for each location indicated.

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- Supplement, March 25, 2008 Revised—TKN is shown here as 4100 mg/kg, but the 4100 mg/kg figure is actually Total Nitrogen. See Page C-I.3 4.b. comment, above. Also, the N requirement used is 120 lb/ac., but that is only true for the Net Facility and the Airstrip. The Seacoast Property N requirement is 100 lb/ac. according to the NMP. Please take this into consideration in your calculations.

Aluminum Loading Calculation—Loading Limits –

- 15 DT/A/yr is the maximum. Please take this into account in your calculations.
- The latest compliance schedule update indicated that alum addition was to continue at the lagoon. Calculations must account for the additional loading.
- Please confirm that this current batch of sludge in the sludge lagoon does not contain any

5/7/2008

aluminum and that these calculations are describing the next batch of sludge projected to be in the sludge lagoon in 2010.

- Where did the figure 45,000 lb dry wt sludge come from? The Supplement, March 2008 Revision 3 page describes 1462 DT/sludge, which converts to 2,925,000 lb dry wt sludge. Please be consistent in the sludge amounts used in calculations. Show how your number of dry tons was calculated.

If you have any questions regarding this matter, please contact me at 805-527-5027 or dmmosca@deq.virginia.gov.

Sincerely,

Denise Mosca
Environmental Specialist II

cc: W. Black, ENPRO

Denise Mosca

Environmental Specialist II

DEQ-Piedmont Regional Office

4949-A Cox Road,

Glen Allen, Va. 23060

(804) 527-5027

fax (804) 527-5106

5/7/2008

Public Notice – Environmental Permit

PURPOSE OF NOTICE: To seek public comment on a proposed permit from the Department of Environmental Quality that will allow the land application of treated industrial waste in Northumberland County, Virginia.

PUBLIC COMMENT PERIOD: May , 2007 to 4 P.M. on June, 2007

PERMIT NAME: Virginia Pollution Abatement issued by DEQ, under the authority of the State Water Control Board

APPLICANT NAME, ADDRESS AND PERMIT NUMBER: Omega Protein Corporation, P.O. Box 175, Reedville, Va. 22539 ; VPA01428

NAME AND ADDRESS OF PERMITTED ACTIVITY: Omega Protein Industrial Sludge Facility, P.O. Box 175, Reedville, Va. 22539

PROJECT DESCRIPTION: Omega Protein has applied for a new issuance of a permit for the land application of industrial sludge generated in the treatment lagoon from their menhaden fish process. The permit will allow the applicant to apply treated industrial waste to 28.3 acres of their agricultural land located at the airstrip, the net facility and the seacoast property at a controlled rate.

HOW TO COMMENT: DEQ accepts comments by e-mail, fax or postal mail. All comments must be in writing and be received by DEQ during the comment period. Written comments must include: 1) The names, mailing addresses and telephone numbers of the person commenting and of all people represented by the citizen. 2) If a public hearing is requested, the reason for holding a hearing, including associated concern. 3) A brief, informal statement regarding the extent of the interest of the person commenting, including how the operation of the facility or activity affects the citizen. DEQ may hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the proposed permit. The public may review the draft permit and application at the DEQ office named below.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION:

Name: Denise Mosca; Address: Piedmont Regional Office, 4949-A Cox Road, Glen Allen, Va. 23060

Phone: (804) 527-5027 E-mail: dmmosca@deq.virginia.gov Fax: (804) 527-5106



July 8, 2008

RECEIVED
JUL 19 2008
PRO

Denise Mosca, Environmental Specialist II
Virginia Department of Environmental Quality
4949-A Cox Road
Glen Allen, Virginia 23060

Re: Permit Issuance VPA01428

Denise
Dear Ms. Mosca:

This letter is in response to your letter of May 6, 2008 regarding Omega's VPA application. The corrections made are shown in red for clarity.

Page C-I.3 4b The corrected TKN value was used in the PAN calculations on the revised "Supplement for Page C-II.3, Question 8"

Page C-i.4 #4c A corrected page C-I.4 is enclosed

Page C-II.2 #2 The following buffers were applied:

- 25 ft on either side of improved roads
- 10 ft on either side of un-improved roads
- 200 ft around each house/drinking water well
- 50 ft for surface waters
- 100 ft from property lines

The area for the airstrip was recalculated based factors listed above. The Sea Coast property is unaffected by improved roads. The areas have increased for the net facility and the airstrip as explained on the revised "Supplement to page C-II.2. The attached 8 ½ x 11 map shows the proposed areas for sludge application, with the acreage indicated.

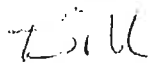
Page C-II.3, #8 The sodium and chloride loadings calculations are shown on the attached "Supplement for Sodium and Chloride"

Form C #8 Land Area Determination The limit of 15 DT/A/yr was applied throughout and the time was not revised as additional acreage was found. This is presented on the revised "Supplement, June 2008 revision 3".

TKN and the N requirements were revised along with the calculations as shown on the revised "Supplement for Nutrients, June 2008".

Aluminum Loading Calculation The current sludge does not contain any aluminum from alum applications. Alum was applied once, in the Spring 2008. The 45,000 lbs is an error, the loading calculations have been revised as presented on the "Supplement for Aluminum, revised June 2008".

Sincerely,



William Purcell
Environmental Director
Omega Protein, Inc.

pc: Tom Wittman, Omega Protein
Bob LaBruzzo, Omega Protein
Bill Black, EnPro
Kyle Winter, Deputy Director - PRO

- c. Provide a separate waste characterization listing for each wastewater and sludge generated at the facility. Insert "Yes" beside all parameters believed present and provide at least one analysis for each. Insert "No" beside all parameters believed not present. Indicate "NA" for any parameter already addressed in Item 4a. or 4b.

Parameter	Believed Present	Concentration*
Acidity	yes	80.8%
Acrolein	no	
Boron	yes	0.1 mg/kg
Bromide	no	
Chlorine	no	
Dioxin	no	
Est. CEC	yes	4.8 meg/100g
Fecal Coliform	yes	<200 MPN/gram
Fluoride	no	
Iron	yes	243.1 mg/kg
pH	yes	4.0 mg/kg
Oil & Grease	yes	<1074 mg/kg
Organic Matter	yes	4.8%
Radioactivity	no	
Sodium	yes	5.12 mg/kg
S. Salts	yes	499 mg/kg
Sulfate (as SO4)	no	
Sulfide (as S)	no	
Sulfite (as SO3)	no	
Surfactants	no	
Total Alpha	no	
Total Aluminum	yes	3,629.4 mg/kg
Total Antimony	no	
Total Arsenic	no	
Total Barium	no	
Total Beryllium	no	
Total Beta	no	
Total Cadmium	no	
Total Chromium	yes	<25 mg/kg
Total Cobalt	yes	2.5 mg/kg
Total Copper	no	
Total Cyanide	no	
Total Lead	no	
Total Magnesium	yes	300 mg/kg
Total Manganese	yes	7.13 mg/kg
Total Molybdenum	no	
Total Mercury	no	
Total Nickel	no	
Total Phenols	no	
Total Radium	no	
Total Radium 226	no	
Total Residual	no	
Total Selenium	no	
Total Silver	no	
Total Thallium	no	
Total Tin	no	
Total Titanium	no	
Total Zinc	no	

* If the analysis is for sludge, report results on dry weight basis.

Supplement to Virginia Pollution Abatement Permit Application, Page C-II.2, Questions #3 & #4
June 2008 revised

The three areas- net facility, airfield and former SeaSoast-have contained only grass for a large number of years. Considering the required buffers, the available land for application has been calculated to be net facility 17.4 acres, airfield 10.1 acres and SeaCoast 5.9 acres. The acreage for the net facility was used because it was decided to use the entire acreage. The acreage for the airfield and former SeaCoast was used because it was decided to use the entire acreage. This is within the need for a 100 foot buffer. The basis of these calculations is shown on the attached boundary map. It has not been Omega's practice to apply any fertilizer to these areas. Omega intends to apply the dried sludge once per year in the early spring when the grass begins to grow. The airplanes don't use the airfield until May.

The dried soil-like sludge would be transported in dump trucks. The trucks would not be lined because the moisture content is less than 10% so there is no free water. Once dumped, the soil would be spread by front end loaders and/or bull dozers. The dumping would be controlled whereby a truck of given capacity would have a calculated area marked on the grass. For example, trucks are typically 16 yards capacity, 16 yards is equal to $16 \times 65 = 1040$ pounds. 1040 divided by 3.5 lbs/ft² = 297 square feet or an area about 17 feet by 17 feet.

Regarding the supply of sludge, there is approximately 50,000 cubic feet of wet sludge in the holding basin. The sludge was removed from the industrial treatment pond in early 2005. We anticipate removing sludge from the treatment pond about every 5 years. At 65 lbs/cubic foot, (sludge that has been dried and has a moisture content of 10%), there is 1462.5 dry tons of sludge to be spread.

The limit of 15 dry tons per acre applies to the airfield (10.2 acres), the net facility (17.4 acres) and SeaCoast property (5.9 acres). Total application is shown in the table below. If the first application was in 2009, the holding basin would be empty by 2011, ready to receive new sludge if it was determined that new sludge needed to be removed by then. Omega doesn't anticipate removing more sludge from the treatment ponds before the year 2011.

Area	App Rate	Year 1	Year 2	Year 3
Net House	15 DT/acre	160.5 DT	160.5 DT	160.5 DT
Airfield	15 DT/acre	153	153	153
SeaCoast	15	<u>88</u>	<u>88</u>	<u>88</u>
Cumulative Totals		391.5	391.5	391.5

At the rate of 15 dry tons per acre, the cumulative loading of metals is shown on the attached spreadsheet. Thus, there is no limit for 153 plus years assuming no uptake by the grass.

The sodium adsorption ratio (SAR), using Na=51.2, Ca=1400 and Mg=300, is calculated to be 0.33, using the formula below, thus, no soil amendments are needed.

$$\text{SAR} = \text{Na}/23 \text{ mg/Meg divided by the square root of } [(\text{Ca}/20 \text{ mg/meg} + \text{Mg}/12 \text{ mg/meg})/2]$$

Agronomic Rates

Using the Virginia Cooperative Extension equation given in DEQ letter dated September 13, 2007 and available data, perform the applicable calculations.

Use fescue grass as the only crop.

Agronomic Nitrogen (N)

Fescue grass—use N = 120 lb/ac as needed loading rate for Inlet Facility and
Airstrip, use N=100 lb/ac for Sea Coast

Assume that N is very mobile. Therefore, other sources of N=0 because legumes have not been grown, N has not already been applied and previous waste has not been applied.

Therefore, the Adjusted N rate remains at 120 lb/ac and 100 lb/ac.

Calculate PAN/dry ton for the first year of application. PAN is "plant available nitrogen".

$$\text{PAN/DT sludge} = 20[(F)(\% \text{ Org-N}) + (V)(\% \text{ NH}_3\text{-N})]$$

PAN=lbs of plant available N per dry ton of Biosolid

F = mineralization of organic nitrogen in sludge within the first year of application= 0.1

V = Amount of NH₃-N not volatilized as determined by: (1) the degree of incorporation and the waiting period before incorporation, at or following land application, and (2) the pH of the sludge = 0.5

Second year = PAN/DT Sludge – 0.05 * % Org N

Third year = PAN/DT Sludge – 0.03 * % Org. N

NH₃-N = 900 ppm = 0.09%

TKN = 4100-21=4079

Org N = TKN-NH₃-N = 4079-900 = 3179

% Org N = 3179/10000 = 0.3179%

PAN/DT Sludge = 20(0.1)(0.3179) + 0.5(0.09) = 0.636 + 0.045 = 0.681
lbs/dry ton Sludge

Second Year = $PAN/DT - 0.05 * \% \text{ Org N} = 0.681 - (0.05)(0.3179) = 0.665 \text{ lbs DT Sludge}$

Third year = $PAN/DT - 0.03 * \% \text{ Org N} = 0.681 - (0.03)(0.3179) = 0.671 \text{ lbs DT Sludge}$

Adjusted N rate = $120 \text{ lbs/DT} / 0.681 \text{ lbs/DT} = 176.2 \text{ DT/acre for Mer Facility and Airfield}$

$= 190 \text{ lbs/DT} / 0.681 \text{ lbs/DT} = 279.0 \text{ DT/acre for Beachrest}$

Agronomic P rate

Agronomic P rate = $P_{\text{req}} / \text{Available } P_2O_5 / \text{dry ton}$

P_{req} = The P fertilizer recommended for the harvested crop or the quantity of P removed by the crop

Avail. $P_2O_5 = 0.5$ (total P_2O_5 /dry ton biosolids

Total P_2O_5 /dry ton = $\%P \text{ in biosolids} \times 20 \times 2.3$

$\% P = 1000 \text{ ppm} = 0.1\%$

$P_{\text{req}} = 50 \text{ lbs/acre}$ based on VA Co-op rating for the Airfield

Total $P_2O_5 /DT = 0.1 \times 20 \times 2.3 = 4.6$

Avail $P_2O_5 = 2.3 \text{ lbs/dry ton biosolids}$

Agronomic P rate = $50 / 2.3 = 21.7 \text{ dry tons/acre}$

The Agronomic N rate exceeds the P rate, thus the P rate controls

Potassium

All potassium in biosolids is available.

$\%K = 300 \text{ ppm} = 0.03\%$

Available $K_2O = \% K \text{ in biosolids} \times 20 \times 1.2 = 0.03 \times 20 \times 1.2 = 0.72$
 $= 0.72 \text{ lbs } K_2O / \text{dry ton biosolids}$

Assume K_2O x required = 70 lbs/acre based on VA Co-op rating for Airfield

Agronomic K rate = $70 \text{ lbs/acre} / 0.72 \text{ lbs/dry tons biosolids} = 97.2$

The Agronomic K rate exceeds the P rate, thus the P rate controls

Cumulative application of trace elements
Omega Protein

Revised JUNE 2008

Trace Element	Maximum cumulative lbs/acre	Concentration of element mg/kg	amount of metals per acre if Sludge application rate = 15 dry tons/acre/year	Years until element is at maximum with no crop uptake
cadmium	35	7.6	0.228	153.51
copper	1340	50.55	1.5165	883.61
lead	270	7.8	0.234	1153.85
nickel	375	12	0.36	1041.67
zinc	2500	11.02	0.3306	7562.01

Supplement to Virginia Pollution Abatement Permit Application, Page C-II.3. Question #8 for Aluminum , Revised June 2008

Aluminum Loading Calculation from page 20 of Industrial Waste Application Guidance. Revised June, 2008

Assume:

Estimated Sludge residuals Al (see below)	3,851 mg/kg dry wt.
Soil bulk density	1.31 gms/cc soil
Density of soil 6 in. x 1 acre	1.7857×10^6 lbs/ac/6 in.
Two Soils Al background concentration	6,760 mg/kg dry wt to 31,800 mg/kg dry wt
Loading limits	15 dry tons/acre and 21.7 dry tons/acre

Mass of Al/acre in the top 6 inches of soil:

$$\frac{6760 \text{ parts Al}}{10^6 \text{ lbs}} \times 1.7857 \times 10^6 \text{ lbs/acre/6 in} = 12,071 \text{ lb/acre}$$

$$31,800 \text{ parts Al} \times 1.7857 \times 10^6 \text{ lbs/acre/6 in} = 56,785 \text{ lb/acre}$$

Estimated Sludge Residuals Al:

The application of Alum to both ponds during the Winter 2008 added a total of 100 lbs Al. The Clemson analysis indicated an existing Al concentration of 3,629 mg/kg

Assuming that the next sludge removal will produce the same amount as the first removal, then 1462.5 Df or 2,925,000 lbs dry wt sludge will have (worst case, all 100 lbs of Al added) 100 lbs.-- $100/2,925,000 = 34 \text{ mg/kg}$. Adding 34 to 3,629 = 3,663 mg/kg

Mass Loading in Aluminum in Top 6 inches of Soil:

$$15 \text{ dry tons} \times 2000 \text{ lbs/ton} \times \frac{3,663 \text{ mg/kg}}{10^6 \text{ soil}} = 109.9 \text{ lb/acre}$$

Percent Increase in Aluminum in Top 6 inches of Soil for 15 dry ton loading:

0.9 % for the soil with the lowest Al levels

0.2 % for the soil with the highest Al levels

Supplement to Virginia Pollution Abatement Permit Application, Page C-II.3, Question #8 for Sodium and Chloride, June 2008

Calculation for Chloride and Sodium loadings

Use DEQ technical manual 5.2.1.3 "Constituents that Migrate"

Formula=

$$A = \frac{(C_i - C_d)}{D_r [C_d (1 -) - C_r]} \times 100 Q$$

D_r = rainfall input, cm/ year, assume 45 inches average annual rainfall = 114 cm/year

Q = Industrial waste volume, M^3 /year, use 501.5 dry tons=1,003,000 lbs/58.5 lbs per cubic foot =17,145 cubic feet or 485.5 cubic meters

A = area required for land application, M^2

C_d = allowable drinking water concentration of Sodium and Chloride, use ground water standards 9VAC 25-280-70 for Sodium = 100 mg/l, coastal plain, and 9VAC 25-280-70, coastal plain for Chloride = 50 mg/l

= Ratio of evaporative losses to rainfall, generally within range of 0.65 to 0.80, use worst case = 0.8

C_i = concentration of the mobile species in the industrial waste, mg/l

Use waste concentrations Sodium = 5.12 mg/kg and Chloride = 215 mg/kg

Convert mg/kg to mg/l using density of soil at 1.6. mg/l = 1.6 (mg/kg soil) or

Sodium = $1.6 \times 270 =$ 432 mg/l

Chloride = $1.6 \times 5.12 =$ 8.2 mg/l

C_r = concentration of the mobile constituent in rainfall, mg/l, assumed to be zero

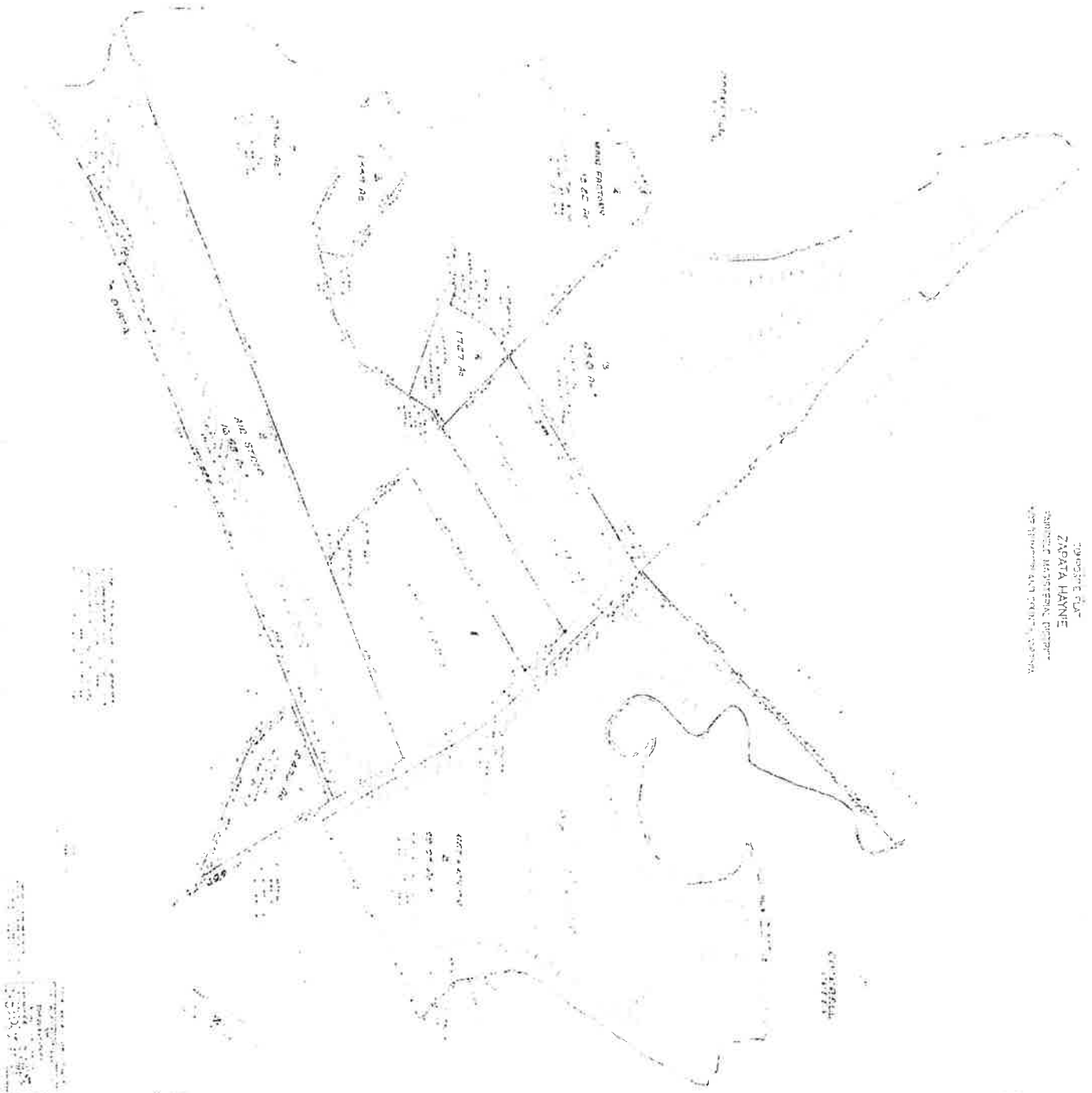
For Sodium $A = \frac{(432-100)}{114[100(1-0.8)]} \times 100 (485.5)$

$A = 332/2280 \times 48,550 = 7,069.6$ square meters = 1.747 acre

Note that the industrial waste will be applied over $10.2+17.4+ 5.9 = 33.5$ acres

For Chloride $A = ((8.2- 50)$ This is a negative number which indicates that the chloride concentration of the waste is not a concern

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4000 1/2 MILES 44.7 100000 100000



OMEGA
PROTEIN

July 8, 2008

RECEIVED
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PFO

Denise Mosca, Environmental Specialist II
Virginia Department of Environmental Quality
4949-A Cox Road
Glen Allen, Virginia 23060

Re: Permit Issuance VPA01428

Dear Ms. Mosca:

This letter is in response to your letter of May 6, 2008 regarding Omega's VPA application. The corrections made are shown in

Page C-I.3 4b The corrected TKN value was used in the PAN calculations on the revised "Supplement for Page C-II.3, Question 8"

Page C-i.4 #4c A corrected page C-I.4 is enclosed

Page C-II.2 #2 The following buffers were applied:

- 25 ft on either side of improved roads
- 10 ft on either side of un-improved roads
- 200 ft around each house/drinking water well
- 50 ft for surface waters
- 100 ft from property lines

The area for the airstrip was recalculated based factors listed above. The Sea Coast property is unaffected by improved roads. The areas have increased for the net facility and the airstrip as explained on the revised "Supplement to page C-II.2. The attached 8 ½ x 11 map shows the proposed areas for sludge application, with the acreage indicated.

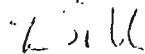
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Form C #8 Land Area Determination The limit of 15 DT/A/yr was applied throughout and the time was not revised as additional acreage was found. This is presented on the revised "Supplement, June 2008 revision 3".

TKN and the N requirements were revised along with the calculations as shown on the revised "Supplement for Nutrients, June 2008".

Aluminum Loading Calculation The current sludge does not contain any aluminum from alum applications. Alum was applied once, in the Spring 2008. The 45,000 lbs is an error, the loading calculations have been revised as presented on the "Supplement for Aluminum, revised June 2008".

Sincerely,



William Purcell
Environmental Director
Omega Protein, Inc.

pc: Tom Wittman, Omega Protein
Bob LaBruzzo, Omega Protein
Bill Black, EnPro
Kyle Winter, Deputy Director - PRO

- c. *Provide a separate waste characterization listing for each wastewater and sludge generated at the facility. Insert "Yes" beside all parameters believed present and provide at least one analysis for each. Insert "No" beside all parameters believed not present. Indicate "NA" for any parameter already addressed in Item 4a. or 4b.*

Parameter	Believed Present	Concentration*
Acidity	yes	80.8%
Acrolein	no	
Boron	yes	0.1 mg/kg
Bromide	no	
Chlorine	no	
Dioxin	no	
Est. CEC	yes	4.8 meg/100g
Fecal Coliform	yes	<200 MPN/gram
Fluoride	no	
Iron	yes	243.1 mg/kg
pH	yes	4.0 mg/kg
Oil & Grease	yes	<1074 mg/kg
Organic Matter	yes	4.8%
Radioactivity	no	
Sodium	yes	5.12 mg/kg
S. Salts	yes	499 mg/kg
Sulfate (as SO ₄)	no	
Sulfide (as S)	no	
Sulfite (as SO ₃)	no	
Surfactants	no	
Total Alpha	no	
Total Aluminum	yes	3,629.4 mg/kg
Total Antimony	no	
Total Arsenic	no	
Total Barium	no	
Total Beryllium	no	
Total Beta	no	
Total Cadmium	no	
Total Chromium	yes	<25 mg/kg
Total Cobalt	yes	2.5 mg/kg
Total Copper	no	
Total Cyanide	no	
Total Lead	no	
Total Magnesium	yes	300 mg/kg
Total Manganese	yes	7.13 mg/kg
Total Molybdenum	no	
Total Mercury	no	
Total Nickel	no	
Total Phenols	no	
Total Radium	no	
Total Radium 226	no	
Total Residual	no	
Total Selenium	no	
Total Silver	no	
Total Thallium	no	
Total Tin	no	
Total Titanium	no	
Total Zinc	no	

* If the analysis is for sludge, report results on dry weight basis.

Supplement to Virginia Pollution Abatement Permit Application, Page C-II.2, Questions #3 & #4
. 2008 revised

The three areas- net facility, airfield and former SeaSoast-have contained only grass for a large number of years. Considering the required buffers, the available land for application has been calculated to be . and SeaCoast 5.9 acres

The basis of these calculations is shown on the attached boundary map. It has not been Omega's practice to apply any fertilizer to these areas. Omega intends to apply the dried sludge once per year in the early spring when the grass begins to grow. The airplanes don't use the airfield until May.

The dried soil-like sludge would be transported in dump trucks. The trucks would not be lined because the moisture content is less than 10% so there is no free water. Once dumped, the soil would be spread by front end loaders and/or bull dozers. The dumping would be controlled whereby a truck of given capacity would have a calculated area marked on the grass. For example, trucks are typically 16 yards capacity, 16 yards is equal to $16 \times 65 = 1040$ pounds. 1040 divided by $3.5 \text{ lbs/ft}^2 = 297$ square feet or an area about 17 feet by 17 feet.

Supplement to Virginia Pollution Abatement Permit Application, Page C-II.3, Question #8
2008 revision 3

Regarding the supply of sludge, there is approximately 50,000 cubic feet of wet sludge in the holding basin. The sludge was removed from the industrial treatment pond in early 2005. We anticipate removing sludge from the treatment pond about every 5 years. At 65 lbs/cubic foot, (sludge that has been dried and has a moisture content of 10%), there is 1462.5 dry tons of sludge to be spread.

The limit of Total application is shown in the table below. If the first application was in , the holding basin would be empty by , ready to receive new sludge if it was determined that new sludge needed to be removed by then. Omega doesn't anticipate removing more sludge from the treatment ponds before the year .

Area	App Rate	Year 1	Year 2	Year 3
Net House				
Airfield	15 DT/acre			
SeaCoast	15	<u>88</u>	<u>88</u>	<u>88</u>

Cumulative Totals

At the rate of dry tons per acre , the cumulative loading of metals is shown on the attached spreadsheet. Thus, there is no limit for 1 plus years assuming no uptake by the grass.

The sodium adsorption ratio (SAR), using Na=51.2, Ca=1400 and Mg=300, is calculated to be 0.33, using the formula below, thus, no soil amendments are needed.

$$\text{SAR} = \text{Na}/23 \text{ mg/Meg divided by the square root of } [(Ca/20 \text{ mg/meg} + Mg/12 \text{ mg/meg})/2]$$

Supplement to Virginia Pollution Abatement Permit Application, Page C-II.3,
Question #8 for Nutrients
June, 2008 revised

Agronomic Rates

Using the Virginia Cooperative Extension equation given in DEQ letter dated September 13, 2007 and available data, perform the applicable calculations.

Use fescue grass as the only crop.

Agronomic Nitrogen (N)

Fescue grass—use N = 120 lb/ac as needed loading rate

Assume that N is very mobile. Therefore, other sources of N=0 because legumes have not been grown, N has not already been applied and previous waste has not been applied.

Therefore, the Adjusted N rate remains at 120 lb/ac

Calculate PAN/dry ton for the first year of application. PAN is "plant available nitrogen".

$$\text{PAN/DT sludge} = 20[(F)(\% \text{ Org-N}) + (V)(\% \text{ NH}_3\text{-N})]$$

PAN=lbs of plant available N per dry ton of Biosolid

F = mineralization of organic nitrogen in sludge within the first year of application = 0.1

V = Amount of NH₃-N not volatilized as determined by: (1) the degree of incorporation and the waiting period before incorporation, at or following land application, and (2) the pH of the sludge = 0.5

Second year = PAN/DT Sludge – 0.05 * % Org N

Third year = PAN/DT Sludge – 0.03 * % Org. N

NH₃-N = 900 ppm = 0.09%

TKN = 4100-

Org N = TKN-NH₃-N = 4100 - 900 = 3200

% Org N = 3200 / 10000 = 0.32%

$$\text{PAN/DT Sludge} = 20(0.1)(0.32) + 0.5(0.09) = 0.64 + 0.045 = 0.685$$

lbs/dry ton Sludge

Second Year = $PAN/DT - 0.05 * \% \text{ Org N} = 0.68 - (0.05)(0.3) = 0.66$ lbs
DT Sludge

Third year = $PAN/DT - 0.03 * \% \text{ Org N} = 0.68 - (0.03)(0.3) = 0.67$ lbs DT
Sludge

Adjusted N rate = $120 \text{ lbs/DT} / 0.68 = 176.5$ lbs/DT =

Agronomic P rate

Agronomic P rate = $P_{\text{req}} / \text{Available } P_2O_5 / \text{dry ton}$

P_{req} = The P fertilizer recommended for the harvested crop or the quantity
of P removed by the crop

Avail. $P_2O_5 = 0.5$ (total P_2O_5 /dry ton biosolids

Total P_2O_5 /dry ton = $\%P \text{ in biosolids} \times 20 \times 2.3$

$\% P = 1000 \text{ ppm} = 0.1\%$

$P_{\text{req}} = 50$ lbs/acre based on VA Co-op rating for the Airfield

Total $P_2O_5 / DT = 0.1 \times 20 \times 2.3 = 4.6$

Avail $P_2O_5 = 2.3$ lbs/dry ton biosolids

Agronomic P rate = $50 / 2.3 = 21.7$ dry tons/acre

The Agronomic N rate exceeds the P rate, thus the P rate controls

Potassium

All potassium in biosolids is available.

$\%K = 300 \text{ ppm} = 0.03\%$

Available $K_2O = \% K \text{ in biosolids} \times 20 \times 1.2 = 0.03 \times 20 \times 1.2 = 0.72$
 $= 0.72$ lbs K_2O /dry ton biosolids

Assume K_2O x required = 70 lbs/acre based on VA Co-op rating for
Airfield

Agronomic K rate = $70 \text{ lbs/acre} / 0.72 \text{ lbs/dry tons biosolids} = 97.2$

The Agronomic K rate exceeds the P rate, thus the P rate controls

Cumulative application of trace elements
Omega Protein

Revised JUNE 2008

Trace Element	Maximum cumulative lbs/acre	Concentration of element mg/kg	amount of metals per acre if Sludge application rate = 15 dry tons/acre/year	Years until element is at maximum with no crop uptake
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lead	270	7.8	0.234	1153.85
nickel	375	12	0.36	1041.67
zinc	2500	11.02	0.3306	7562.01

Aluminum Loading Calculation from page 20 of Industrial Waste Application Guidance.

Assume:

Estimated Sludge residuals Al (see below)	3,851 mg/kg dry wt.
Soil bulk density	1.31 gms/cc soil
Density of soil 6 in. x 1 acre	1.7857×10^6 lbs/ac/6 in.
Two Soils Al background concentration	6,760 mg/kg dry wt to 31,800 mg/kg dry wt
Loading limits	15 dry tons/acre and 21.7 dry tons/acre

Mass of Al/acre in the top 6 inches of soil:

$$\frac{6760 \text{ parts Al}}{10^6 \text{ lbs}} \times 1.7857 \times 10^6 \text{ lbs/acre/6 in} = 12,071 \text{ lb/acre}$$

$$31,800 \text{ parts Al} \times 1.7857 \times 10^6 \text{ lbs/acre/6 in} = 56,785 \text{ lb/acre}$$

Estimated Sludge Residuals Al:

The application of Alum to both ponds during the Winter 2008 added a total of 100 lbs Al. The Clemson analysis indicated an existing Al concentration of 3,629 mg/kg

Assuming that the next sludge removal will produce the same amount as the first removal, then lbs dry wt sludge will have (worst case, all 100 lbs of Al added) 100 lbs.--

Mass Loading in Aluminum in Top 6 inches of Soil:

$$15 \text{ dry tons} \times 2000 \text{ lbs/ton} \times \frac{3,663 \text{ mg/kg}}{10^6 \text{ soil}} = 109.9 \text{ lb/acre}$$

Percent Increase in Aluminum in Top 6 inches of Soil for 15 dry ton loading:

% for the soil with the lowest Al levels

0.2 % for the soil with the highest Al levels

Supplement to Virginia Pollution Abatement Permit Application, Page C-II.3, Question #8 for Sodium and Chloride, June 2008

Calculation for Chloride and Sodium loadings

Use DEQ technical manual 5.2.1.3 "Constituents that Migrate"

Formula=

$$A = \frac{(C_i - C_d)}{D_r [C_d (1 -) - C_r]} \times 100 Q$$

D_r = rainfall input, cm/ year, assume 45 inches average annual rainfall = 114 cm/year

Q = Industrial waste volume, M^3 /year, use 501.5 dry tons=1,003,000 lbs/58.5 lbs per cubic foot =17,145 cubic feet or 485.5 cubic meters

A = area required for land application, M^2

C_d = allowable drinking water concentration of Sodium and Chloride, use ground water standards 9VAC 25-280-70 for Sodium = 100 mg/l, coastal plain, and 9VAC 25-280-70, coastal plain for Chloride = 50 mg/l

= Ratio of evaporative losses to rainfall, generally within range of 0.65 to 0.80, use worst case = 0.8

C_i = concentration of the mobile species in the industrial waste, mg/l

Use waste concentrations Sodium = 5.12 mg/kg and Chloride = 215 mg/kg

Convert mg/kg to mg/l using density of soil at 1.6. mg/l = 1.6 (mg/kg soil) or

$$\text{Sodium} = 1.6 \times 270 = \underline{432 \text{ mg/l}}$$

$$\text{Chloride} = 1.6 \times 5.12 = \underline{8.2 \text{ mg/l}}$$

C_r = concentration of the mobile constituent in rainfall, mg/l, assumed to be zero

$$\text{For Sodium } A = \frac{(432-100)}{114[100(1-0.8)]} \times 100 (485.5)$$

$$A = 332/2280 \times 48,550 = 7,069.6 \text{ square meters} = \underline{1.747 \text{ acre}}$$

Note that the industrial waste will be applied over 10.2+17.4+ 5.9 = 33.5 acres

For Chloride $A = ((8.2- 50)$ This is a negative number which indicates that the chloride concentration of the waste is not a concern

7/26/1967
LAPATA HAYNE
LAPATA HAYNE
LAPATA HAYNE

L. Preston Bryant, Jr.
Secretary of Natural
Resources



Joseph H. Maroon
Director

COMMONWEALTH of VIRGINIA
DEPARTMENT OF CONSERVATION AND RECREATION

203 Governor Street, Suite 206
Richmond, Virginia 23219
Phone: (804) 786-2064 Fax: (804) 786-1798

September 6, 2007

Omega Protein, Inc.
P.O. Box 175
Reedville, VA 22539

The nutrient management plan dated 8/27/2007 for land application of a sludge by-product in Northumberland County in Watershed CB03 has been approved by the Department of Conservation and Recreation for coverage under a Virginia Pollution Abatement (VPA) permit.

It should be noted that this plan expires 8/27/2010. We recommend the process of revising this nutrient management plan begin at least six months prior to the expiration date.

A copy of this letter should be kept with your nutrient management plan and a copy of this letter and the plan must be sent to the Piedmont Regional Office of the Department of Environmental Quality.

If you have any questions concerning this letter, please feel free to contact me at (804) 371-6133 or e-mail seth.mullins@dcr.virginia.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Seth Mullins".

Seth Mullins
Nutrient Management Coordinator
Division of Soil and Water Conservation

cc: David Kindig
Robert Waring, DCR
Piedmont, DEQ

NUTRIENT MANAGEMENT PLAN IDENTIFICATION

Operator

Omega Protein, Inc.
P.O. Box 175
Reedville, VA 22539
(804) 453 4211

Integrator: None

Farm Coordinates

Easting: 0, Northing: 0, zone: 18

Watershed Summary

watershed: CB03
county: Northumberland

Nutrient Management Planner

Robert Waring
Nutrient Management Specialist
VADCR
P.O. Box 1425
Tappahannock, VA 22560

Certification Code: 250

Acreage Use Summary

Total Acreage in this plan: 28.3

Cropland:	0.
Hayland:	0.
Pasture:	0.
Specialty:	28.3

Plan written 8/27/2007
Valid until 8/27/2010

Signature: _____

Planner

08/27/07

date

Nutrient Management Plan Narrative

This nutrient management plan was developed for Omega Protein, Inc. who operates in Northumberland County. The plan has been developed as a requirement for the Virginia Pollution Abatement general permit. A sludge by-product from the processing of menhaden fish is dried and stored for application to turf grass fields. Approximately 28 acres is available for land application of the sludge waste. The rates of application were determined from the nutrient needs of the grass based on representative soil tests and not from the production amounts of the menhaden sludge. The lagoons have never been cleaned out since production began and therefore, the amount of sludge to be applied can only be estimated. Once application begins, a revised plan should be developed if the amounts of sludge stored on site exceed the amounts of sludge in the nutrient management plan.

Soil tests taken in the fall of 2005 and the spring of 2006 were used in determining appropriate sludge applications. Soil tests should be retaken when possible to update soil ph results and determine if liming is required. See attached soil test summary sheet for recommended application dates and liming rates. All liming recommendations are now derived from the *ph buffer index* instead of soil ph. Please refer to the attached charts for clarification of lime recommendations.

Particular attention should be given to fields containing high environmentally sensitive soils due to leaching, drainage, slopes > 15%, flooding frequency listed as "frequent" in soil surveys, subsurface tile drained areas and fields containing sinkholes. Fields containing at least 33% of field surface area with one or more of the aforementioned features are highlighted solid on the adjoining aerial maps. Further direction is given in the "notes" on the balance sheets for the high environmentally sensitive fields as to particular split application practices and recommendations for timely applications of manure, biosolids and commercial fertilizer.

Nutrient Management Plan Special Conditions for Virginia Pollution Abatement (VPA) and Virginia Pollutant Discharge Elimination System (VPDES) Permits

April 2006

The following management practices will be utilized for operations requiring a VPA or VPDES permit and located in eastern Virginia (east of I-95):

1. Soil samples for sludge application fields will be analyzed at least once every three (3) years for pH, phosphorus, potassium, calcium, and magnesium in order to maximize the efficient utilization of nutrients. A representative soil sample of each field will be comprised of at least 20 cores randomly sampled throughout the field. Soil sampling core depth will be from 0 – 4 inches for land which has not been tilled within the past three years, or 0 – 6 inches for land that has been tilled within the past three years. Soil pH will be maintained at appropriate agronomic levels to promote optimum crop growth and nutrient utilization.
2. Soil test analysis will be performed by one of the laboratories listed below. Soil phosphorus levels must be determined using the Mehlich I or Mehlich III procedure.
 - A&L Agricultural Laboratories
 - Brookside Laboratories
 - Spectrum Analytical Laboratories
 - Virginia Tech Soil Testing Lab
 - Waters Agricultural Laboratories
3. Representative sludge samples will be analyzed at a minimum of once every three years for VPA permits and once per year for VPDES permits for the following: total nitrogen or total Kjeldahl nitrogen, ammonia-nitrogen, total phosphorus, total potassium, and percent moisture. All sludge analyses shall be performed using laboratory methods consistent with Recommended Methods of Manure Analysis, publication A3769, University of Wisconsin, 2003 or other methods approved by the Department of Conservation and Recreation. Sludge analysis results will be used to determine actual sludge rates that do not exceed the nitrogen and phosphorus application rates specified in the nutrient management plan using either the most recent analysis results (not greater than 1 year old) or the facilities average results based on actual analysis.
4. All crops will be planted and harvested in a timely manner using commercially acceptable management practices.
5. Make sludge applications at or near planting or to existing actively growing crops to assure that nutrients are properly utilized. Additional commercial fertilizer applications (especially nitrogen) should be made as a split application separate from the sludge application, either as a sidedress or topdress application.

For permanent hay or pasture, an adequate stand of hay and/or pasture crop species will be established prior to land application of sludge. Commercially acceptable stands of the

listed species will be maintained and other weeds and grasses controlled. All hay crops will be harvested in a timely and regular manner, removed from fields, and utilized for a suitable purpose.

6. Sludge will be applied to application sites in a uniform manner.
7. Do not spread sludge on soils that are saturated, ice or snow covered in order to avoid runoff from application fields. Dry sludge may be applied to frozen ground only under the following conditions:
 - a) Slopes are not greater than 6%;
 - b) A minimum of a 200 foot vegetative or adequate crop residue buffer is maintained between the application area and all surface water courses;
 - c) Only those soils characterized by USDA as "well drained" with good infiltration are used; and
 - d) At least 60% uniform cover by vegetation or crop residue is present.
8. Do not spread sludge within the following setback areas:
 - 100 feet from wells or springs
 - 35 feet from surface waters if the entire setback is a permanent perennial vegetated buffer

OR

100 feet from surface waters if there is not a permanent perennial vegetated buffer of at least 35 feet in width

 - 50 feet from sinkholes*
 - 50 feet from limestone rock outcrops
 - 25 feet from other rock outcrops
 - 10 feet from agricultural drainage ditches (5 feet if injected)
 - 200 feet from occupied dwellings (unless waived in writing by the occupant)

*Waste shall not be applied in areas subject to concentrated flow generated by runoff from storm events such that it would discharge into sinkholes in the area.
11. For odor control and to reduce drift, avoid spreading on windy days.
12. If sludge is stackable and contains less than 40% moisture, storage may be utilized for up to 14 days on sites meeting the following criteria:

The slope is not greater than 7%,
The site must be at least 100 feet from any surface water, intermittent drainage, wells, sinkholes, rock outcrops and springs.
13. Storage sites used for greater than 14 days must be identified in this plan. These sites which are not covered by a roof must meet the following criteria:
 - a) The sludge can not be stored for greater than 180 days; and
 - b) The waste is covered with a waterproof reinforced tarp (ultraviolet resistant is preferable) or impermeable sheeting of 6 mil thickness or greater; that is anchored against wind on the perimeter and weighted on the top; and

c) The waste stockpile is protected from storm water running onto or under it.

14. New waste storage facilities shall be designed, constructed and operated in accordance with the USDA-NRCS Field Office Technical Guide and other appropriate NRCS design criteria.
15. Spreader calibration is extremely critical to ensure proper application rates. Calibration of equipment or verification of actual equipment application rates shall occur at a minimum of once per year.
16. Nutrient management plans that contain fields in which row crops will be grown, will be revised at least once every three (3) years. Nutrient management plans that contain only hay or pasture fields will be revised at least once every five (5) years. Any such plan revisions will be submitted to DCR for review and approval.
17. This nutrient management plan must be amended or modified if: animal numbers increase above the level specified in the plan; animal types including intended market weights are changed; additional imported manure, biosolids, or industrial waste that was not identified in the existing plan is applied to fields under the control of the operator; available land area for the utilization of manure decreases below the level necessary to utilize manure in the plan; or manure application fields have Mehlich 1 soil phosphorus levels at or above 55 ppm (110 pounds/acre P) where either cropping systems, rotations, or fields are changed.
18. Minor plan amendments involving changes to the cropping system, crop rotations, specific application fields, manure analysis results or minor fluctuations in animal market weights or animal numbers (10% or less cumulative increase since this original plan was developed.) may be made to this nutrient management plan by the specific certified nutrient management planner that developed this NMP without the prior approval of DCR. Any such plan amendments must be made prior to subsequent nutrient application to fields impacted by the change. Certified nutrient management planners shall provide a copy of any such plan amendments to DCR within two weeks of the plan modification.
19. All major plan modifications shall be submitted to DCR for review and approval prior to implementing any changes. Major modifications include but are not limited to: proposed changes to the plan expiration date; increases in animal numbers of greater than 10% or changes in animal types including intended market weight; additional imported manure, biosolids, or industrial wastes not included in the original NMP are to be applied; or available land area for the utilization of manure decreases below the level necessary to utilize manure in the plan due to sale of land, expired lease, etc.
20. These conditions do not override any local or county ordinances that may be more restrictive.

CLOSURE OF WASTE STORAGE FACILITIES

When the waste storage facility is no longer needed, the owner or operator shall close the storage facility in a manner that minimizes the need for further maintenance, and controls, minimizes or eliminates, to the extent necessary to protect human health and the environment, the post closure escape of uncontrolled leachate, surface runoff, or waste decomposition products to ground water, surface water or to the atmosphere. At closure, the owner or operator shall remove all liquid waste and animal waste residue from the waste storage facility. All devices used to convey animal waste into the animal waste storage facility shall be removed. Removed waste materials shall either be utilized according to this nutrient management plan or disposed of as solid waste according to the requirements of the Virginia Solid Waste Management Regulations, 9 VAC 20-80-10 et seq.

Once the waste is removed, the owner or operator is required to follow the procedures outlined below to either backfill the facility or convert the facility to a fresh water pond:

- If the facility will be backfilled, clay liners on interior side slopes will be removed using earth moving equipment or destroyed using sub-soiling equipment and any synthetic liners on side slopes will be rolled or folded and placed in the bottom of the structure prior to backfilling. Such liner removal or destruction shall, at a minimum, occur in the area from the top of the structure to a depth of within three feet of the structure bottom or groundwater whichever is greatest in elevation at the time of closure. The storage facility shall be backfilled with clean material. The animal waste storage facility site shall have a final earthen cover that is designed and constructed to: minimize infiltration of rainwater; minimize erosion of the final cover or side slope material; prevent ponding and support a suitable vegetative cover. In order to ensure proper drainage, the final cover shall have a minimum slope of 5%. Following installation, the owner or operator shall maintain the integrity and effectiveness of the final cover, including any repair needed due to settlement, subsidence, erosion or other events and preventing run-on and run-off from eroding or otherwise damaging the final cover.
- If the facility will be converted to a fresh water pond, the structure to be converted shall be reconstructed as necessary to meet the standard specification for ponds (practice #378) as contained in the Natural Resources Conservation Service (NRCS) Field Office Technical Guide and shall include a principle spillway and an emergency spillway if an embankment of three feet or more exists.

The owner or operator shall complete these closure activities within six months after the last date on which animal waste is placed in the waste storage facility unless the nutrient management plan is revised and approved by the Department of Conservation and Recreation (DCR). The owner and operator shall notify the regional office of the Department of Environmental Quality (DEQ) upon completion or grading of the final earthen cover or completion of the converted pond structure.

Environmental Risk Factors

This nutrient management plan was developed for Omega Protein, Inc. who operates in Northumberland County. All sources of nutrients including commercial fertilizer, animal manures, biosolids, and previous legume crops combined should not exceed those rates specified in this plan.

This site-specific plan is based on the predominant soil types and their associated yield records, crop rotation, soil tests and leaching index found in the field. Credit is given for residual nutrients derived from legumes in previous crops. With implementation of this plan, one will help avoid economic, agronomic, and environmental problems that may be due to soil fertility levels. For individual field recommendations, please refer to the nutrient balance sheets provided.

In order to provide accurate fertilizer recommendations, it is important to take soil samples once every three years. These samples provide valuable information such as soil fertility levels and pH. Based on this information, the soil types and associated productivities, the amount of plant nutrients for a rotation can be identified. Recommendations included in this plan focus on efficiency through timing and proper rates of organic or inorganic fertilizer on farmland. Refer to the soil test summary report in this plan for all liming recommendations.

The data used in the form of maps and acreage was obtained from associated Soil and Water Conservation Districts. All other field information was provided by the operator for which this plan was written. Please refer to the enclosed documents for specific field by field information, i.e. nutrient balance sheets and productivity summaries. If other forms of nutrient sources are used during the plan (sludge, manure, etc...), appropriate balance sheets must be substituted to reflect nutrients applied or addressed in the form of a revised plan.

ADDITIONAL CONSIDERATIONS:

- a.) Maintain agronomic pH levels for maximum plant utilization of applied nutrients.
- b.) Avoid or reduce fertilizer applications near streams, wells, or other environmentally sensitive areas.
 - *100 feet from wells or springs
 - *50 feet from surface water if surface applied
 - *25 feet from surface water if injected
 - *50 feet from sinkholes
 - *50 feet from limestone rock outcrops
 - *25 feet from other rock outcrops
 - *10 feet from agricultural drainage ditches (5 feet if injected)
- c.) Control erosion in fields receiving fertilizer and/or manure applications. Do not apply to frozen or snow covered ground.
- d.) Split nitrogen applications on corn and small grain to minimize runoff, leaching and to help increase availability to plant over a longer period of time and to help increase yields.
- e.) Give credit for carryover nitrogen from previous legume crops, animal manures and any other organic source of nutrients.

f.) The proper timing rate, and placement of fertilizer and/or animal manure is critical for reducing leaching and runoff of nutrients from these sources. It also helps to ensure that you maximize uptake of nutrients by crops from the nutrients used.

g.) Make sure application equipment is properly calibrated to achieve proper application rates of nutrients.

h.) For odor control and to reduce drift, avoid spreading on windy days.

Manure Spreading Summary

Season	Manure	Rate/ac	Tract	Field	Acres	Crop	Total in Field	Running Total
2007Fa	Composted sludge	15.0 tons	Airfield	1	9	Est. Turfgrass	137 tons	137 tons
		15.0 tons	Net Facili	1	13	Est. Turfgrass	200 tons	336 tons
		15.0 tons	Sea Coast	1	6	Est. Turfgrass	89 tons	425 tons

Season	Manure	Rate/ac	Tract	Field	Acres	Crop	Total in Field	Running Total
2008Fa	Composted sludge	15.0 tons	Airfield	1	9	Est. Turfgrass	137 tons	137 tons
		15.0 tons	Net Facili	1	13	Est. Turfgrass	200 tons	336 tons
		15.0 tons	Sea Coast	1	6	Est. Turfgrass	89 tons	425 tons

Season	Manure	Rate/ac	Tract	Field	Acres	Crop	Total in Field	Running Total
2009Fa	Composted sludge	15.0 tons	Airfield	1	9	Est. Turfgrass	137 tons	137 tons
		15.0 tons	Net Facili	1	13	Est. Turfgrass	200 tons	336 tons
		15.0 tons	Sea Coast	1	6	Est. Turfgrass	89 tons	425 tons

Field Productivities for Major Crops

Tract Name	Tract/ Field	Field Name	Acres	Predominant Soil Series	Corn	Small Grain	Alfalfa	Grass Hay	Environmental Warnings
Airfield	/1	1	9	BERTIE	IIIa	II	Not Suited	II	
Net Facility	/1	1	13	MATAPEAKE	IIIa	II	III	II	
Sea Coast Pr	/1	1	6	MATAPEAKE	IIIb	III	III	III	

Yield Range

Field Productivity Group	Corn Grain Bu/Acre	Barley/Intensive Wheat Bu/Acre	Std. Wheat Bu/Acre	Alfalfa Tons/Acre	Grass/Hay Tons/Acre
I	>170	>80	>64	>6	>4.0
II	150-170	70-80	56-64	4-6	3.5-4.0
III	130-150	60-70	48-56	<4	3.0-3.5
IV	100-130	50-60	40-48	NA	<3.0
V	<100	<50	<40	NA	NA

Soil Test Summary

Tract	Field	Acre	Date	P2O5	K2O	Lab	Soil pH	Lime Date	rec. lime tons/Ac
Airfield	1	9	2006-Sp	L- (4 P lbs/acre)	L (38 K lbs/acre)	Virginia Tech	5.1		
Net Facility	1	13	2006-Sp	M- (20 P lbs/acre)	L (22 K lbs/acre)	Virginia Tech	5.		
Sea Coast Property	1	6	2005-Fa	L (7 P lbs/acre)	L (34 K lbs/acre)	Virginia Tech	5.1		

Lime Recommendations for Va Tech soil tests based on Soil buffer pH

Buffer pH	Target Soil pH					Acidity meq/100g
	5.2	5.8	6.2	6.5	6.8	
6.60	0.00	0.00	0.00	0.00	0.00	0.00
6.50	0.00	0.00	0.00	0.00	0.00	0.03
6.40	0.00	0.00	0.00	0.00	0.50	0.06
6.38	0.00	0.00	0.25	0.25	0.50	0.12
6.36	0.00	0.00	0.25	0.25	0.75	0.24
6.34	0.00	0.00	0.25	0.50	0.75	0.36
6.32	0.00	0.00	0.50	0.50	0.75	0.48
6.30	0.00	0.00	0.50	0.75	1.00	0.59
6.28	0.00	0.25	0.75	0.75	1.00	0.71
6.26	0.00	0.25	0.75	1.00	1.25	0.83
6.24	0.00	0.25	0.75	1.00	1.25	0.95
6.22	0.00	0.50	1.00	1.00	1.50	1.07
6.20	0.00	0.50	1.00	1.25	1.50	1.19
6.18	0.00	0.75	1.25	1.25	1.75	1.30
6.16	0.00	0.75	1.25	1.50	1.75	1.42
6.14	0.25	0.75	1.50	1.50	2.00	1.54
6.12	0.25	1.00	1.50	1.75	2.00	1.66
6.10	0.50	1.00	1.50	1.75	2.25	1.78
6.08	0.50	1.25	1.75	2.00	2.25	1.90
6.06	0.50	1.25	1.75	2.00	2.25	2.02
6.04	0.75	1.25	2.00	2.00	2.50	2.13
6.02	0.75	1.50	2.00	2.25	2.50	2.25
6.00	1.00	1.50	2.00	2.25	2.75	2.37
5.95	1.00	1.75	2.25	2.50	3.00	2.67
5.90	1.25	2.00	2.50	3.00	3.25	2.96
5.85	1.50	2.25	2.75	3.25	3.50	3.26
5.80	1.75	2.50	3.25	3.50	3.75	3.56
5.75	2.00	2.75	3.50	3.75	4.25	3.85
5.70	2.25	3.00	3.75	4.00	4.50	4.15
5.65	2.50	3.25	4.00	4.25	4.75	4.45
5.60	2.75	3.50	4.25	4.50	5.00	4.74
5.55	3.00	3.75	4.50	4.75	5.25	5.04
5.50	3.25	4.00	4.75	5.25	5.50	5.34
5.40	3.75	4.50	5.25	5.75	6.25	5.93
5.30	4.25	5.00	5.75	6.25	6.75	6.52

*table from VA nutrient management standards and criteria - revised october 2005

Manure Production Summary

Biosolid Name: Composted sludge

Availability: unlimited

Biosolid Type: Composted

% solid: 65.0

pH: 6.2

%CCE: 0.0

Biosolid Analysis (ppm):

TKN: 4100

NH4-N: 900

NO3: 0

P2O5: 2290

K2O: 360

Plant Available Nutrients:

Immediate Incorporation:

1.41 lbs N

2.98 lbs P2O5

0.47 lbs K2O

Surface Applied:

1.0 lbs N

2.98 lbs P2O5

0.47 lbs K2O

Residual N:

yr1: 0.21 lbs N

yr2: 0.12 lbs N

yr3: 0.0 lbs N



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| A | A | A |

[Area of Interest](#)

[Soil Map](#)

[Soil Data Explorer](#)

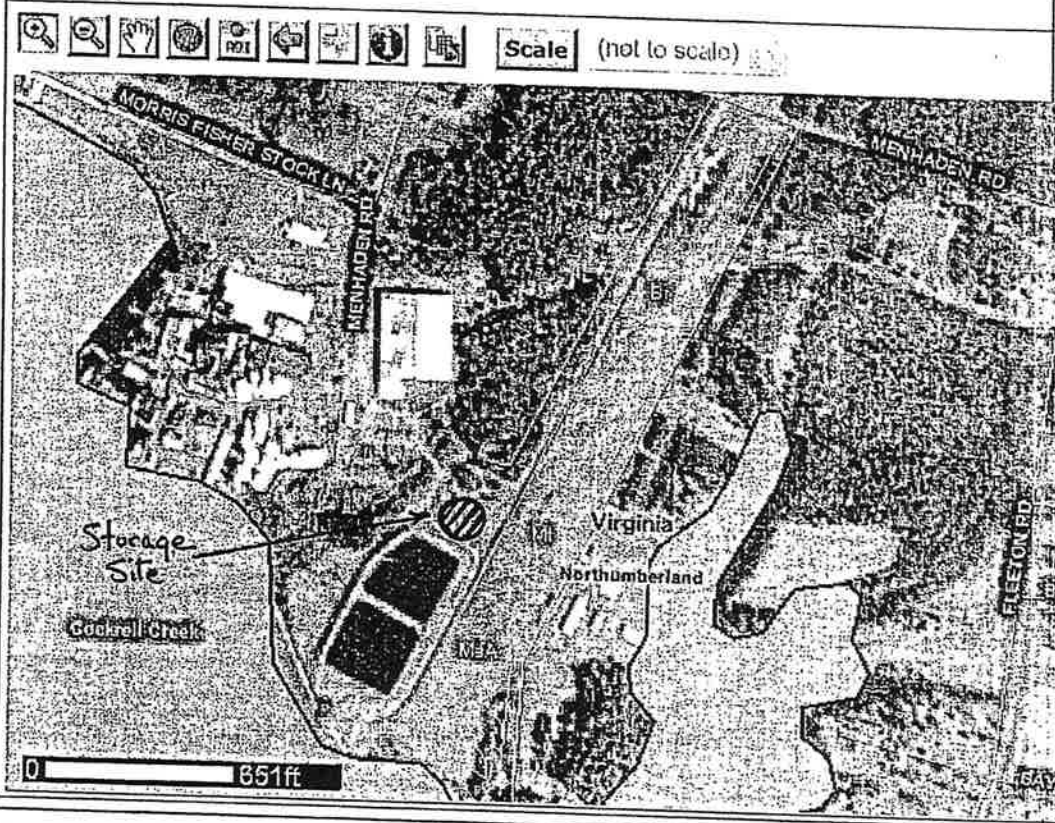
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Map Unit Legend Summary

Northumberland and Lancaster Counties, Virginia

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Br	Bertie silt loam	6.6	52.4
MaA	Matapeake silt loam, nearly level	3.4	27.2
Mt	Mattapex silt loam	1.8	14.1
SsD	Sloping sandy land	0.7	5.3
To	Tidal marsh, low	0.1	1.0

Soil Map



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Area of Interest

Soil Map

Soil Data Explorer

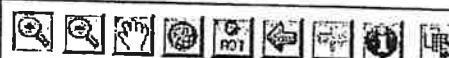
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Map Unit Legend Summary

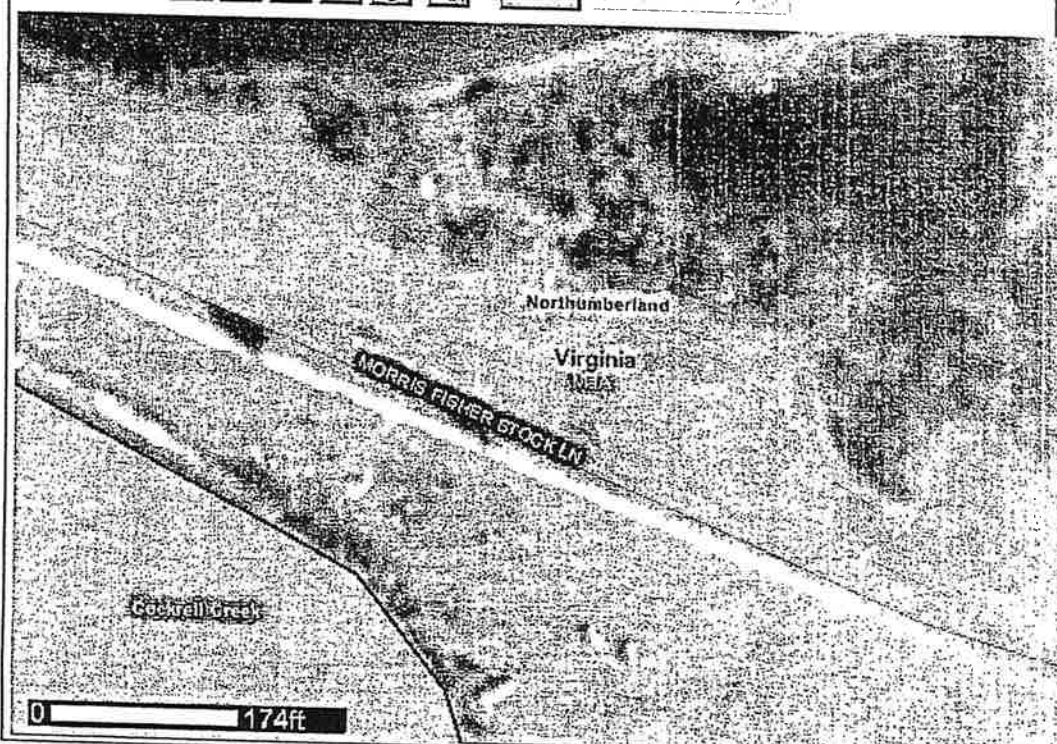
Northumberland and Lancaster Counties, Virginia

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
MaA	Matapeake silt loam, nearly level	2.3	91.8
SsD	Sloping sandy land	0.2	8.3

Soil Map



Scale (not to scale)



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Area of Interest

Soil Map

Soil Data Explorer

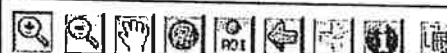
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Map Unit Legend Summary

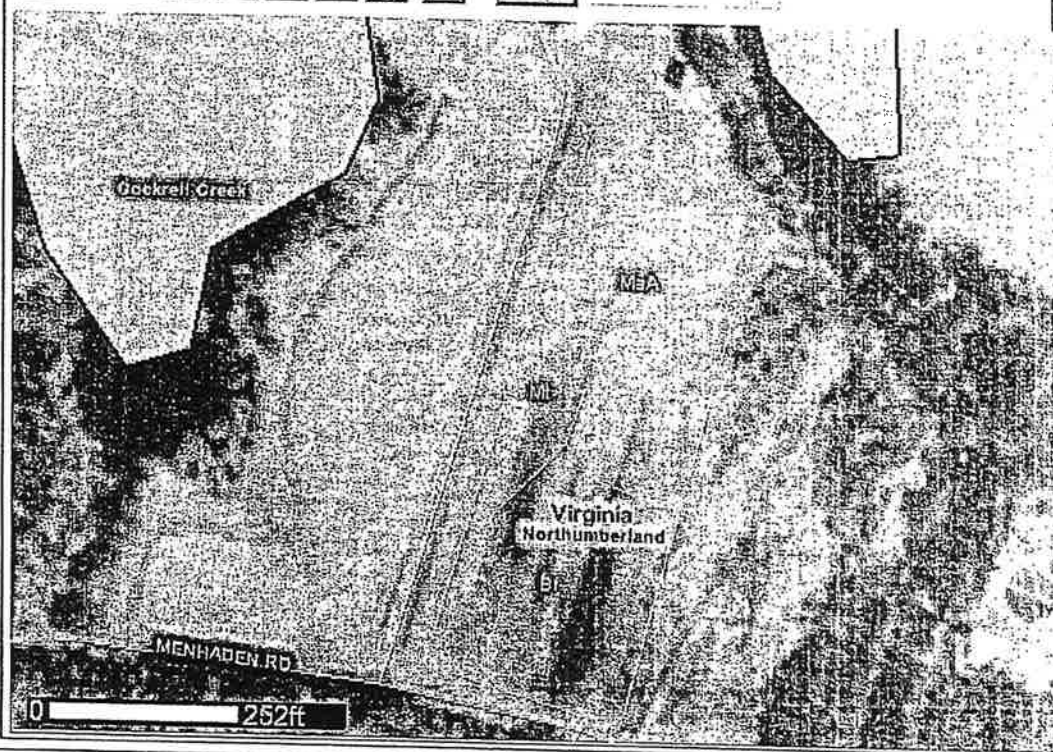
Northumberland and Lancaster Counties, Virginia

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
Br	Bertie silt loam	1.7	37.2
MaA	Matapeake silt loam, nearly level	2.2	47.6
Mt	Mattapex silt loam	0.5	11.1
SsD	Sloping sandy land	0.2	4.1

Soil Map



Scale (not to scale)



Nutrient Management Plan Balance Sheet
(Spring, 2007-Winter, 2010)
Omega Protein, Inc.
Planner: Robert Waring (cert. No. 250)

Tract: Airfield Location: Northumberland

(N = N based, 1P = P based, 1.5P = P based at 1.5 removal, 0P = No P allowed)

Field CFSA No. /Name	Size (ac) Total/ Used	Yr.	Crop	Needs N-P-K (lbs/ac)	Leg /Man Resid	Manure/Biosld Rate & Type (season)	IT (d)	Man/Bios N-P-K (lbs/ac)	Net = Needs - appld N-P-K (lbs/ac)	Sum P rem cred	Commercial N-P-K (lbs/ac)	Notes	
1/1(N)	9/9	2007	Est. Turfgrass	120-120-220	0/0	15.t Compos(Fa)	>7	15-45-7	105-75-215	N/A	105-75- 215(br)		
		2008	*** ** *	120-120-220	0/3	15.t Compos(Fa)	>7	15-45-7	100-75-215	N/A	100-75- 215(br)		
		2009	*** ** *	120-120-220	0/5	15.t Compos(Fa)	>7	15-45-7	100-75-215	N/A	100-75- 215(br)		
		2010	*** ** *	0-0-0	0/5				(5)-0-0	N/A	215(br)		

Commercial Application Methods:

br - Broadcast ba - Banded sd - Sidedress

Notes:

Tract: Net Facility Location: Northumberland

(N = N based, 1P = P based, 1.5P = P based at 1.5 removal, 0P = No P allowed)

Field CFSA No. /Name	Size (ac) Total/ Used	Yr.	Crop	Needs N-P-K (lbs/ac)	Leg /Man Resid	Manure/Biosld Rate & Type (season)	IT (d)	Man/Bios N-P-K (lbs/ac)	Net = Needs - applied N-P-K (lbs/ac)	Sum P rem cred	Commercial N-P-K (lbs/ac)	Notes	
1/1(N)	13/13	2007	Est. Turfgrass	120-90-220	0/0	15.t Compos(Fa)	>7	15-45-7	105-45-215	N/A	105-45- 215(br) 100-45- 215(br) 100-45- 215(br)		
		2008	*** ** *	120-90-220	0/3	15.t Compos(Fa)	>7	15-45-7	100-45-215	N/A			
		2009	*** ** *	120-90-220	0/5	15.t Compos(Fa)	>7	15-45-7	100-45-215	N/A			
		2010	*** ** *	0-0-0	0/5				(5)-0-0	N/A			

Commercial Application Methods:

br - Broadcast ba - Banded sd - Sidedress

Notes:

Tract: Sea Coast Property Location: Northumberland
(N = N based, 1P = P based, 1.5P = P based at 1.5 removal, 0P = No P allowed)

Field CFSA No. /Name	Size (ac) Total/ Used	Yr.	Crop	Needs N-P-K (lbs/ac)	Leg /Man Resid	Manure/Biosld Rate & Type (season)	IT (d)	Man/Bios N-P-K (lbs/ac)	Net = Needs - appld N-P-K (lbs/ac)	Sum P rem cred	Commercial N-P-K (lbs/ac)	Notes	
1/1(N)	6/6	2007	Est. Turfgrass	100-80-130	0/0	15.t Compos(Fa)	>7	15-45-7	85-35-125	N/A	85-35-125(br)		
		2008	...	100-80-130	0/3	15.t Compos(Fa)	>7	15-45-7	80-35-125	N/A	80-35-125(br)		
		2009	...	100-80-130	0/5	15.t Compos(Fa)	>7	15-45-7	80-35-125	N/A	80-35-125(br)		
		2010	...	0-0-0	0/5				(5)-0-0	N/A			

Commercial Application Methods:

br - Broadcast ba - Banded sd - Sidedress

Notes:

ANIMAL WASTE ANALYSIS REPORT
Agricultural Service Laboratory
Clemson University

LAB No. 101313

OMEGA, PROTEIN
P O BOX 175
REEDVILLE VA

22539

ACCOUNT 1001703
DATE 10-27-2006
ROBERT.WARING@DCR.VIRGINIA.GOV

CONSULTANT ROBERT WARING VADCR

SAMPLE NO. FALL2006

MANURE: OTHER INTEGRATOR: STORAGE: UNCOVERED

-----RESULTS REPORTED ON AN AS-SAMPLED BASIS-----

ANALYST				lbs/ton
pj	Ammonium Nitrogen	0.09	%	1.80
pj	Total Nitrogen	0.41	%	8.15

dw/km	Phosphorus as P2O5	0.10	%	2.08
dw/km	Potassium as K2O	0.03	%	0.62
dw/km	Calcium	0.14	%	2.85
dw/km	Magnesium	0.03	%	0.52
	Sulfur	0.05	%	0.91
	Zinc	11.02	ppm	0.02
	Copper	50.55	ppm	0.10
	Manganese	7.13	ppm	0.01
	Sodium	51.20	ppm	0.10
	Aluminum	3629.40	ppm	7.26
jp	Moisture	35.19	%	

All of the potash in the animal waste should be plant available in the first year of application. Although not all of the phosphorous is available in the first year, its availability should be comparable to that in commercial fertilizers.

The rate of animal waste to apply for crop production is dependent on the nutrient content of the waste, method of application and incorporation, soil test, crop to be grown, and previous manure applications. In most cases, the plant available nitrogen content of the waste is used to determine the rate of application.

APPROVED BY _____

Analysis performed in accordance with Clemson Laboratory Manure Analysis procedures, February, 2004.

Manure analysis in Virginia is funded by the Dept. of Conservation and, Recreation, Div. of Soil and Water Conservation.

The Agricultural Service Laboratory is a public service of Clemson University, an equal opportunity educational institution: <http://www.clemson.edu/agssrvlb>

205. FERTILIZER RECOMMENDATIONS: Apply a 1-1-1, 1-2-2 or 2-1-1 ratio fertilizer (examples of grades to use are 10-10-10, 5-10-10, 10-20-20, 16-8-8, etc.) according to the instructions in the enclosed note on lawn fertilization.

Virginia Cooperative Extension

Soil Test Report

Northumberland County Office
P.O. Box 400
Heathsville, VA 22473-0400
804-580-5694

Virginia Tech Soil Testing Laboratory
145 Smyth Hall (0465)
Blacksburg, VA 24061
www.soiltest.vt.edu

SEE ENCLOSED NOTES:

1 3

O
W
N
E
R

JETT LYELL
OMEGA PROTEIN
P O BOX 175
REEDVILLE, VA 22539

C
O
P
Y

BILL BLACK
401 STUDEWOOD STE 208
HOUSTON, 77007

SAMPLE HISTORY

Sample ID	Field ID	LAST CROP		LAST LIME APPLICATION		SOIL INFORMATION				
		Name	Yield	Months Prev.	Tons/Acre	SMU-1 %	SMU-2 %	SMU-3 %	Yield Estimate	Productivity Group
AIRFD	AIRFIELD			---	0					III

LAB TEST RESULTS (see Note 1)

Analysis	P (lb/A)	K (lb/A)	Ca (lb/A)	Mg (lb/A)	Zn (ppm)	Mn (ppm)	Cu (ppm)	Fe (ppm)	B (ppm)	S.Salts (ppm)
Result	4	38	313	54	1.1	0.8	0.3	43.6	0.1	38
Rating	L	L	L	L+	SUFF	SUFF	SUFF	SUFF	SUFF	L

Analysis	Soil pH	Buffer pH	Est.-CEC (meq/100g)	Acidity (%)	Base Sat. (%)	Ca Sat. (%)	Mg Sat. (%)	K Sat. (%)	Organic Matter (%)
Result	5.1	6.00	3.4	69.3	30.7	22.8	6.5	1.4	2.2

FERTILIZER AND LIMESTONE RECOMMENDATIONS

Crop: Orchardgrass/Fescue-Clover Pasture (40)

Lime, TONS/AC	
Amount	Type
2	AG

Fertilizer, lb/A		
N	P2O5	K2O
50	50	70

890. Soil Survey map unit information was not provided, neither was a field Yield estimate. As a result only generalized fertilizer recommendations could be made. Field specific and more scientifically-based recommendations can be provided if soil map unit information is included in the future. Contact your extension agent to learn how to obtain available soil survey information for your farm.

825. If stand contains less than 25 per cent clover, apply 40-60 lbs N/A.

131. If additional production is needed later on, apply 40 to 60 lbs/A of N during the grazing season. If you are planning to overseed a legume into the stand, omit the N recommendation.

122. P2O5 and K2O recommendations are for annual application. However, rates can be doubled and applied every other year if desired.

677. Soluble Salts are not high enough to cause salt injury.



July 8, 2008

RECEIVED
JUL 09 2008
PRO

Denise Mosca, Environmental Specialist II
Virginia Department of Environmental Quality
4949-A Cox Road
Glen Allen, Virginia 23060

Re: Permit Issuance VPA01428

Denise
Dear Ms. Mosca:

This letter is in response to your letter of May 6, 2008 regarding Omega's VPA application. The corrections made are shown in red for clarity.

Page C-I.3 4b The corrected TKN value was used in the PAN calculations on the revised "Supplement for Page C-II.3, Question 8"

Page C-i.4 #4c A corrected page C-I.4 is enclosed

Page C-II.2 #2 The following buffers were applied:

- 25 ft on either side of improved roads
- 10 ft on either side of un-improved roads
- 200 ft around each house/drinking water well
- 50 ft for surface waters
- 100 ft from property lines

The area for the airstrip was recalculated based factors listed above. The Sea Coast property is unaffected by improved roads. The areas have increased for the net facility and the airstrip as explained on the revised "Supplement to page C-II.2. The attached 8 ½ x 11 map shows the proposed areas for sludge application, with the acreage indicated.

Page C-II.3, #8 The sodium and chloride loadings calculations are shown on the attached "Supplement for Sodium and Chloride"

Form C #8 Land Area Determination The limit of 15 DT/A/yr was applied throughout and the time was not revised as additional acreage was found. This is presented on the revised "Supplement, June 2008 revision 3".

TKN and the N requirements were revised along with the calculations as shown on the revised "Supplement for Nutrients, June 2008".

Aluminum Loading Calculation The current sludge does not contain any aluminum from alum applications. Alum was applied once, in the Spring 2008. The 45,000 lbs is an error, the loading calculations have been revised as presented on the "Supplement for Aluminum, revised June 2008".

Sincerely,



William Purcell
Environmental Director
Omega Protein, Inc.

pc: Tom Wittman, Omega Protein
Bob LaBruzzo, Omega Protein
Bill Black, EnPro
Kyle Winter, Deputy Director - PRO

- c. *Provide a separate waste characterization listing for each wastewater and sludge generated at the facility. Insert "Yes" beside all parameters believed present and provide at least one analysis for each. Insert "No" beside all parameters believed not present. Indicate "NA" for any parameter already addressed in Item 4a. or 4b.*

Parameter	Believed Present	Concentration*
Acidity	yes	80.8%
Acrolein	no	
Boron	yes	0.1 mg/kg
Bromide	no	
Chlorine	no	
Dioxin	no	
Est. CEC	yes	4.8 meg/100g
Fecal Coliform	yes	<200 MPN/gram
Fluoride	no	
Iron	yes	243.1 mg/kg
pH	yes	4.0 mg/kg
Oil & Grease	yes	<1074 mg/kg
Organic Matter	yes	4.8%
Radioactivity	no	
Sodium	yes	5.12 mg/kg
S. Salts	yes	499 mg/kg
Sulfate (as SO ₄)	no	
Sulfide (as S)	no	
Sulfite (as SO ₃)	no	
Surfactants	no	
Total Alpha	no	
Total Aluminum	yes	3,629.4 mg/kg
Total Antimony	no	
Total Arsenic	no	
Total Barium	no	
Total Beryllium	no	
Total Beta	no	
Total Cadmium	no	
Total Chromium	yes	<25 mg/kg
Total Cobalt	yes	2.5 mg/kg
Total Copper	no	
Total Cyanide	no	
Total Lead	no	
Total Magnesium	yes	300 mg/kg
Total Manganese	yes	7.13 mg/kg
Total Molybdenum	no	
Total Mercury	no	
Total Nickel	no	
Total Phenols	no	
Total Radium	no	
Total Radium 226	no	
Total Residual	no	
Total Selenium	no	
Total Silver	no	
Total Thallium	no	
Total Tin	no	
Total Titanium	no	
Total Zinc	no	

* If the analysis is for sludge, report results on dry weight basis.

Supplement to Virginia Pollution Abatement Permit Application, Page C-II.2, Questions #3 & #4
June, 2008 revised

The three areas- net facility, airfield and former SeaSoast-have contained only grass for a large number of years. Considering the required buffers, the available land for application has been calculated to be Net Facility 17.4 acres, Airfield 10.2 acres and SeaCoast 5.9 acres. The acreage for the Net Facility increased because Omega decided to use the entire property. The acreage for the airfield increased because Omega purchased the Lillian Havre property, thus negating the need for a 100 foot buffer. The basis of these calculations is shown on the attached boundary map. It has not been Omega's practice to apply any fertilizer to these areas. Omega intends to apply the dried sludge once per year in the early spring when the grass begins to grow. The airplanes don't use the airfield until May.

The dried soil-like sludge would be transported in dump trucks. The trucks would not be lined because the moisture content is less than 10% so there is no free water. Once dumped, the soil would be spread by front end loaders and/or bull dozers. The dumping would be controlled whereby a truck of given capacity would have a calculated area marked on the grass. For example, trucks are typically 16 yards capacity, 16 yards is equal to $16 \times 65 = 1040$ pounds. $1040 \text{ divided by } 3.5 \text{ lbs/ft}^2 = 297 \text{ square feet}$ or an area about 17 feet by 17 feet.

Regarding the supply of sludge, there is approximately 50,000 cubic feet of wet sludge in the holding basin. The sludge was removed from the industrial treatment pond in early 2005. We anticipate removing sludge from the treatment pond about every 5 years. At 65 lbs/cubic foot, (sludge that has been dried and has a moisture content of 10%), there is 1462.5 dry tons of sludge to be spread.

The limit of 15 dry tons per acre applies to the airfield (10.2 acres), the net facility (17.4 acres) and SeaCoast property (5.9 acres). Total application is shown in the table below. If the first application was in 2009, the holding basin would be empty by 2011, ready to receive new sludge if it was determined that new sludge needed to be removed by then. Omega doesn't anticipate removing more sludge from the treatment ponds before the year 2011.

Area	App Rate	Year 1	Year 2	Year 3
Net House	15 DT/acre	150.5 DT	150.5 DT	150.5 DT
Airfield	15 DT/acre	153	153	111
SeaCoast	15	<u>88</u>	<u>88</u>	<u>88</u>
Cumulative Totals		301.5	300.5	1462.5

At the rate of 15 dry tons per acre, the cumulative loading of metals is shown on the attached spreadsheet. Thus, there is no limit for 153 plus years assuming no uptake by the grass.

The sodium adsorption ratio (SAR), using Na=51.2, Ca=1400 and Mg=300, is calculated to be 0.33, using the formula below, thus, no soil amendments are needed.

$$\text{SAR} = \text{Na}/23 \text{ mg/Meg divided by the square root of } [(\text{Ca}/20 \text{ mg/meg} + \text{Mg}/12 \text{ mg/meg})/2]$$

Supplement to Virginia Pollution Abatement Permit Application, Page C-II.3,
Question #8 for Nutrients
June, 2008 revised

Agronomic Rates

Using the Virginia Cooperative Extension equation given in DEQ letter dated September 13, 2007 and available data, perform the applicable calculations.

Use fescue grass as the only crop.

Agronomic Nitrogen (N)

Fescue grass—use N = 120 lb/ac as needed loading rate for Net Facility and Airstrip. Use N=100 lb/ac for Sea Coast

Assume that N is very mobile. Therefore, other sources of N=0 because legumes have not been grown, N has not already been applied and previous waste has not been applied.

Therefore, the Adjusted N rate remains at 120 lb/ac and 100 lb/ac.

Calculate PAN/dry ton for the first year of application. PAN is “plant available nitrogen”.

$$\text{PAN/DT sludge} = 20[(F)(\% \text{ Org-N}) + (V)(\% \text{NH}_3\text{-N})]$$

PAN=lbs of plant available N per dry ton of Biosolid

F = mineralization of organic nitrogen in sludge within the first year of application= 0.1

V = Amount of NH₃-N not volatilized as determined by: (1) the degree of incorporation and the waiting period before incorporation, at or following land application, and (2) the pH of the sludge = 0.5

Second year = PAN/DT Sludge – 0.05 * % Org N

Third year = PAN/DT Sludge – 0.03 * % Org. N

NH₃-N = 900 ppm = 0.09%

TKN = 4100-21=4079

Org N = TKN-NH₃-N = 4079-900 = 3179

% Org N = 3179/10000 = 0.3179%

PAN/DT Sludge = 20(0.1)(0.3179) + 0.5(0.09) = 0.636 + 0.045 = 0.681
lbs/dry ton Sludge

Second Year = $PAN/DT - 0.05 * \% \text{ Org N} = 0.681 - (0.05)(0.3179) = 0.665 \text{ lbs DT Sludge}$

Third year = $PAN/DT - 0.03 * \% \text{ Org N} = 0.681 - (0.03)(0.3179) = 0.671 \text{ lbs DT Sludge}$

Adjusted N rate = $120 \text{ lbs/DT} / 0.681 \text{ lbs/DT} = 176.2 \text{ DT/ acre for Net Facility and Airstrip}$

$= 100 \text{ lbs/DT} / 0.681 \text{ lbs/DT} = 146.8 \text{ DT/ac for Seacoast}$

Agronomic P rate

Agronomic P rate = $P_{\text{req}} / \text{Available } P_2O_5 / \text{dry ton}$

P_{req} = The P fertilizer recommended for the harvested crop or the quantity of P removed by the crop

Avail. $P_2O_5 = 0.5$ (total P_2O_5 /dry ton biosolids)

Total P_2O_5 /dry ton = $\%P \text{ in biosolids} \times 20 \times 2.3$

$\% P = 1000 \text{ ppm} = 0.1\%$

$P_{\text{req}} = 50 \text{ lbs/acre based on VA Co-op rating for the Airfield}$

Total $P_2O_5 /DT = 0.1 \times 20 \times 2.3 = 4.6$

Avail $P_2O_5 = 2.3 \text{ lbs/dry ton biosolids}$

Agronomic P rate = $50 / 2.3 = 21.7 \text{ dry tons/acre}$

The Agronomic N rate exceeds the P rate, thus the P rate controls

Potassium

All potassium in biosolids is available.

$\%K = 300 \text{ ppm} = 0.03\%$

Available $K_2O = \% K \text{ in biosolids} \times 20 \times 1.2 = 0.03 \times 20 \times 1.2 = 0.72$
 $= 0.72 \text{ lbs } K_2O / \text{dry ton biosolids}$

Assume $K_2O \times \text{required} = 70 \text{ lbs/acre based on VA Co-op rating for Airfield}$

Agronomic K rate = $70 \text{ lbs/acre} / .72 \text{ lbs/dry tons biosolids} = 97.2$

The Agronomic K rate exceeds the P rate, thus the P rate controls

Cumulative application of trace elements
Omega Protein

Revised JUNE 2008

Trace Element	Maximum cumulative lbs/acre	Concentration of element mg/kg	amount of metals per acre if Sludge application rate = 15 dry tons/acre/year	Years until element is at maximum with no crop uptake
cadmium	35	7.6	0.228	153.51
copper	1340	50.55	1.5165	883.61
lead	270	7.8	0.234	1153.85
nickel	375	12	0.36	1041.67
zinc	2500	11.02	0.3306	7562.01

Supplement to Virginia Pollution Abatement Permit Application, Page C-II.3, Question #8 for Aluminum , Revised June 2008

Aluminum Loading Calculation from page 20 of Industrial Waste Application Guidance, Revised June, 2008

Assume:

Estimated Sludge residuals Al (see below)	3,851 mg/kg dry wt.
Soil bulk density	1.31 gms/cc soil
Density of soil 6 in. x 1 acre	1.7857×10^6 lbs/ac/6 in.
Two Soils Al background concentration	6,760 mg/kg dry wt to
	31,800 mg/kg dry wt
Loading limits	15 dry tons/acre and
	21.7 dry tons/acre

Mass of Al/acre in the top 6 inches of soil:

$$\frac{6760 \text{ parts Al}}{10^6 \text{ lbs}} \times 1.7857 \times 10^6 \text{ lbs/acre/6 in} = 12,071 \text{ lb/acre}$$

$$31,800 \text{ parts Al} \times 1.7857 \times 10^6 \text{ lbs/acre/6 in} = 56,785 \text{ lb/acre}$$

Estimated Sludge Residuals Al:

The application of Alum to both ponds during the Winter 2008 added a total of 100 lbs Al. The Clemson analysis indicated an existing Al concentration of 3,629 mg/kg

Assuming that the next sludge removal will produce the same amount as the first removal, then 1462.5 DT or 2,925,000 lbs dry wt sludge will have (worst case, all 100 lbs of Al added) 100 lbs.-- $100/2,925,000 = 34 \text{ mg/kg}$. Adding 34 to 3,629 = 3,663 mg/kg

Mass Loading in Aluminum in Top 6 inches of Soil:

$$15 \text{ dry tons} \times 2000 \text{ lbs/ton} \times \frac{3,663 \text{ mg/kg}}{10^6 \text{ soil}} = 109.9 \text{ lb/acre}$$

Percent Increase in Aluminum in Top 6 inches of Soil for 15 dry ton loading:

0.9 % for the soil with the lowest Al levels

0.2 % for the soil with the highest Al levels

Supplement to Virginia Pollution Abatement Permit Application, Page C-II.3, Question #8 for Sodium and Chloride, June 2008

Calculation for Chloride and Sodium loadings

Use DEQ technical manual 5.2.1.3 "Constituents that Migrate"

Formula=

$$A = \frac{(C_i - C_d)}{D_r [C_d (1 -) - C_r]} \times 100 Q$$

D_r = rainfall input, cm/ year, assume 45 inches average annual rainfall = 114 cm/year

Q = Industrial waste volume, M^3 /year, use 501.5 dry tons=1,003,000 lbs/58.5 lbs per cubic foot =17,145 cubic feet or 485.5 cubic meters

A = area required for land application, M^2

C_d = allowable drinking water concentration of Sodium and Chloride, use ground water standards 9VAC 25-280-70 for Sodium = 100 mg/l, coastal plain, and 9VAC 25-280-70, coastal plain for Chloride = 50 mg/l

= Ratio of evaporative losses to rainfall, generally within range of 0.65 to 0.80, use worst case = 0.8

C_i = concentration of the mobile species in the industrial waste, mg/l

Use waste concentrations Sodium = 5.12 mg/kg and Chloride = 215 mg/kg

Convert mg/kg to mg/l using density of soil at 1.6. mg/l = 1.6 (mg/kg soil) or

$$\text{Sodium} = 1.6 \times 270 = \underline{432 \text{ mg/l}}$$

$$\text{Chloride} = 1.6 \times 5.12 = \underline{8.2 \text{ mg/l}}$$

C_r = concentration of the mobile constituent in rainfall, mg/l, assumed to be zero

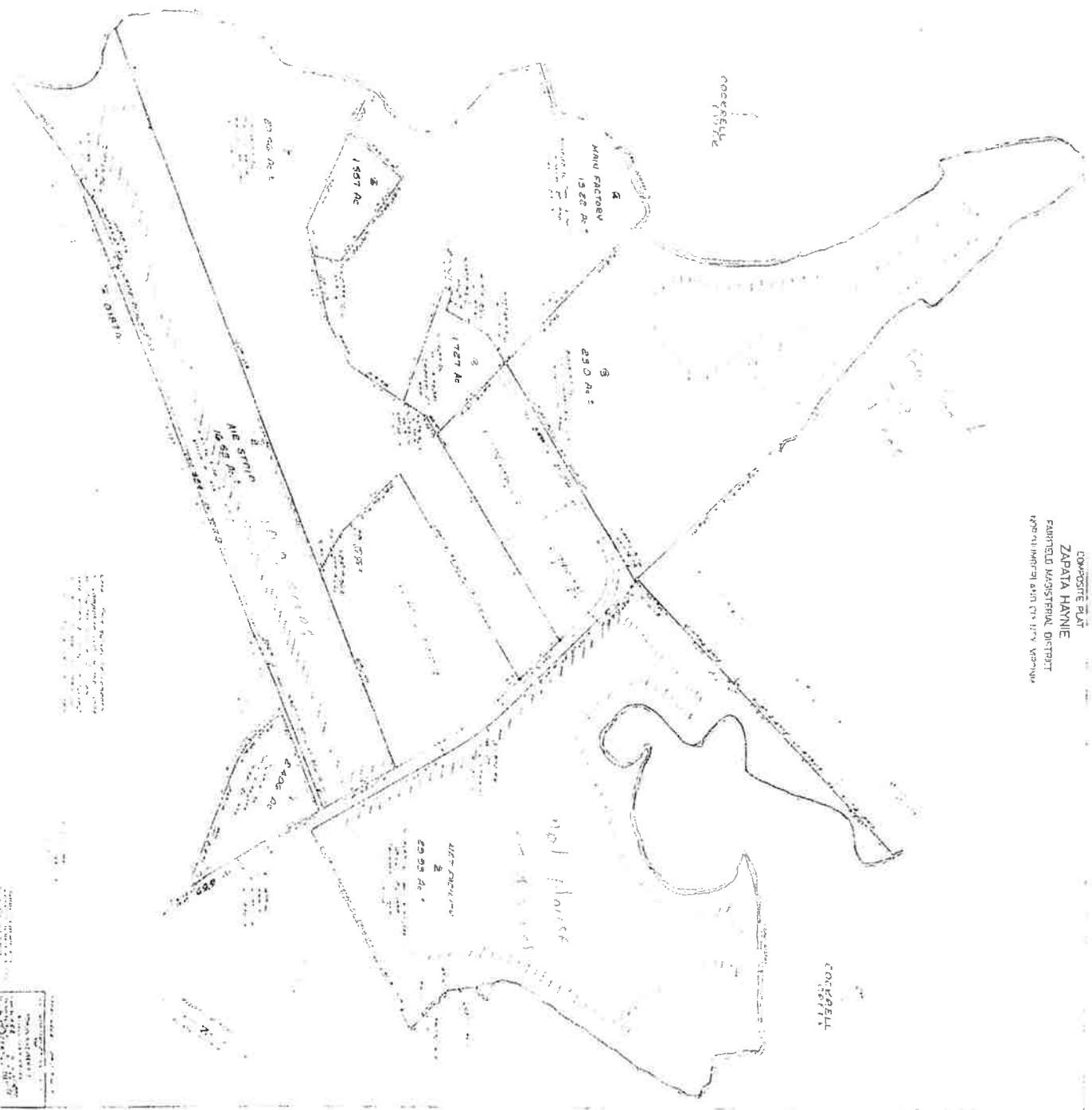
$$\text{For Sodium } A = \frac{(432-100)}{114[100(1-0.8)]} \times 100 (485.5)$$

$$A = 332/2280 \times 48,550 = 7,069.6 \text{ square meters} = \underline{1.747 \text{ acre}}$$

Note that the industrial waste will be applied over $10.2+17.4+ 5.9 = 33.5$ acres

For Chloride $A = ((8.2- 50)$ This is a negative number which indicates that the chloride concentration of the waste is not a concern

COMPOSITE PLAN
 ZAPATA HAYNIE
 FAIRFIELD MASTERPLAN DISTRICT
 100% (11/10/2014) AND 10% (11/10/2014)



100% (11/10/2014) AND 10% (11/10/2014)



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

PIEDMONT REGIONAL OFFICE

1949-A Cox Road, Glen Allen, Virginia 23060

(804) 527-5020 Fax (804) 527-5106

www.deq.virginia.gov

L. Preston Bryant, Jr.
Secretary of Natural Resources

David K. Paylor
Director

Gerard Seeley, Jr.
Regional Director

December 3, 2008

Mr. W. Purcell
Environmental Manager
P.O. Box 175
Reedville, Virginia 22539

RE: VPDES Permit Reissuance VA0003867 Omega Protein

Dear Mr. ^{Bill}Purcell:


This letter is to remind you that your VPDES permit will expire on December 1, 2010. If you wish to continue discharging, you must reapply for the permit. The State Water Control Board's VPDES Permit Regulation requires that we receive a complete application at least 180 days before the existing permit expires. The deadline for submitting the application is June 1, 2010. Early submissions are welcome and will better enable us to complete processing before permit expiration. The instructions and application forms are enclosed, including the Water Quality Criteria Monitoring form. **Please complete the water quality criteria monitoring form for each outfall.** If you would like to request a waiver from any of the sampling or testing requirements in the application forms, you must submit your application and a thorough justification for the request at least 240 days prior to the exiting permit's expiration date. These waiver requests must be approved by DEQ and the U.S. EPA at least 180 days before the existing permit expires. DEQ will review your waiver request and, if it is justified, forward it to EPA. Failure to submit the waiver request by the 240 day deadline will result in the waiver being denied.

Upon completing the application, return the original and four copies to the Piedmont Regional Office at the above address.

Also note that DEQ has launched an e-DMR program that allows you to submit effluent data electronically. If you are interested in participating in this program please visit the following website for details: <http://www.deq.virginia.gov/water/edmrfaq.html> ✓

Please contact me at (804) 527-5027 or dmmosca@deq.virginia.gov if you have any questions.

Sincerely,


Denise M. Mosca

Environmental Specialist II

VA0003867 Omega Protein
Outfall 001

All units are ug/l, unless noted.

ATTACHMENT A
DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY CRITERIA MONITORING

CASRN#	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL ⁽¹⁾	REPORTING RESULTS	SAMPLE TYPE ⁽²⁾	SAMPLE FREQUENCY
METALS						
7440-36-0	Antimony, dissolved	(3)	4.6 E +05		G or C	1/5 YR
7440-38-2	Arsenic, dissolved	(3)	2.3 E +03		G or C	1/5 YR
7440-43-9	Cadmium, dissolved	(3)	5.6 E +02		G or C	1/5 YR
16065-83-1	Chromium III, dissolved ⁽⁸⁾	(3)	(5)		G or C	1/5 YR
18540-29-9	Chromium VI, dissolved ⁽⁸⁾	(3)	3.2 E +03		G or C	1/5 YR
7440-50-8	Copper, dissolved	(3)	3.8 E +02		G or C	1/5 YR
7439-92-1	Lead, dissolved	(3)	5.9 E +02		G or C	1/5 YR
7439-97-6	Mercury, dissolved	(3)	5.4 E +00		G or C	1/5 YR
7440-02-0	Nickel, dissolved	(3)	5.2 E +02		G or C	1/5 YR
7782-49-2	Selenium, dissolved	(3)	4.5 E +03		G or C	1/5 YR
7440-22-4	Silver, dissolved	(3)	8.5 E +01		G or C	1/5 YR
7440-28-0	Thallium, dissolved	(4)	(5)		G or C	1/5 YR
7440-66-6	Zinc, dissolved	(3)	3.8 E +03		G or C	1/5 YR
PESTICIDES/PCB'S						
309-00-2	Aldrin	608	0.05		G or SC	1/5 YR
57-74-9	Chlordane	608	0.2		G or SC	1/5 YR
2921-88-2	Chlorpyrifos (synonym = Dursban)	622	(5)		G or SC	1/5 YR
72-54-8	DDD	608	0.1		G or SC	1/5 YR
72-55-9	DDE	608	0.1		G or SC	1/5 YR
50-29-3	DDT	608	0.1		G or SC	1/5 YR
8065-48-3	Demeton	(4)	(5)		G or SC	1/5 YR
60-57-1	Dieldrin	608	0.1		G or SC	1/5 YR
959-98-8	Alpha-Endosulfan	608	0.1		G or SC	1/5 YR
33213-65-9	Beta-Endosulfan	608	0.1		G or SC	1/5 YR
1031-07-8	Endosulfan Sulfate	608	0.1		G or SC	1/5 YR

CASRN#	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL ⁽¹⁾	REPORTING RESULTS	SAMPLE TYPE ⁽²⁾	SAMPLE FREQUENCY
72-20-8	Endrin	608	0.1		G or SC	1/5 YR
7421-93-4	Endrin Aldehyde	(4)	(5)		G or SC	1/5 YR
86-50-0	Guthion	622	(5)		G or SC	1/5 YR
76-44-8	Heptachlor	608	0.05		G or SC	1/5 YR
1024-57-3	Heptachlor Epoxide	(4)	(5)		G or SC	1/5 YR
319-84-6	Hexachlorocyclohexane Alpha-BHC	608	(5)		G or SC	1/5 YR
319-85-7	Hexachlorocyclohexane Beta-BHC	608	(5)		G or SC	1/5 YR
58-89-9	Hexachlorocyclohexane Gamma-BHC or Lindane	608	(5)		G or SC	1/5 YR
143-50-0	Kepone	(9)	(5)		G or SC	1/5 YR
121-75-5	Malathion	(4)	(5)		G or SC	1/5 YR
72-43-5	Methoxychlor	(4)	(5)		G or SC	1/5 YR
2385-85-5	Mirex	(4)	(5)		G or SC	1/5 YR
56-38-2	Parathion	(4)	(5)		G or SC	1/5 YR
11096-82-5	PCB 1260	608	1.0		G or SC	1/5 YR
11097-69-1	PCB 1254	608	1.0		G or SC	1/5 YR
12672-29-6	PCB 1248	608	1.0		G or SC	1/5 YR
53469-21-9	PCB 1242	608	1.0		G or SC	1/5 YR
11141-16-5	PCB 1232	608	1.0		G or SC	1/5 YR
11104-28-2	PCB 1221	608	1.0		G or SC	1/5 YR
12674-11-2	PCB 1016	608	1.0		G or SC	1/5 YR
1336-36-3	PCB Total	608	7.0		G or SC	1/5 YR
8001-35-2	Toxaphene	608	5.0		G or SC	1/5 YR
BASE NEUTRAL EXTRACTABLES						
83-32-9	Acenaphthene	625	10.0		G or SC	1/5 YR
120-12-7	Anthracene	625	10.0		G or SC	1/5 YR
92-87-5	Benzidine	(4)	(5)		G or SC	1/5 YR
56-55-3	Benzo (a) anthracene	625	10.0		G or SC	1/5 YR
205-99-2	Benzo (b) fluoranthene	625	10.0		G or SC	1/5 YR
207-08-9	Benzo (k) fluoranthene	625	10.0		G or SC	1/5 YR

CASRN#	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL ⁽¹⁾	REPORTING RESULTS	SAMPLE TYPE ⁽²⁾	SAMPLE FREQUENCY
50-32-8	Benzo (a) pyrene	625	10.0		G or SC	1/5 YR
111-44-4	Bis 2-Chloroethyl Ether	(4)	(5)		G or SC	1/5 YR
39638-32-9	Bis 2-Chloroisopropyl Ether	(4)	(5)		G or SC	1/5 YR
85-68-7	Butyl benzyl phthalate	625	10.0		G or SC	1/5 YR
91-58-7	2-Chloronaphthalene	(4)	(5)		G or SC	1/5 YR
218-01-9	Chrysene	625	10.0		G or SC	1/5 YR
53-70-3	Dibenz(a,h)anthracene	625	20.0		G or SC	1/5 YR
84-74-2	Dibutyl phthalate (synonym = Di-n-Butyl Phthalate)	625	10.0		G or SC	1/5 YR
95-50-1	1,2-Dichlorobenzene	624	10.0		G or SC	1/5 YR
541-73-1	1,3-Dichlorobenzene	624	10.0		G or SC	1/5 YR
106-46-7	1,4-Dichlorobenzene	624	10.0		G or SC	1/5 YR
91-94-1	3,3-Dichlorobenzidine	(4)	(5)		G or SC	1/5 YR
84-66-2	Diethyl phthalate	625	10.0		G or SC	1/5 YR
117-81-7	Di-2-Ethylhexyl Phthalate	625	10.0		G or SC	1/5 YR
131-11-3	Dimethyl phthalate	(4)	(5)		G or SC	1/5 YR
121-14-2	2,4-Dinitrotoluene	625	10.0		G or SC	1/5 YR
122-66-7	1,2-Diphenylhydrazine	(4)	(5)		G or SC	1/5 YR
206-44-0	Fluoranthene	625	10.0		G or SC	1/5 YR
86-73-7	Fluorene	625	10.0		G or SC	1/5 YR
118-74-1	Hexachlorobenzene	(4)	(5)		G or SC	1/5 YR
87-68-3	Hexachlorobutadiene	(4)	(5)		G or SC	1/5 YR
77-47-4	Hexachlorocyclopentadiene	(4)	(5)		G or SC	1/5 YR
67-72-1	Hexachloroethane	(4)	(5)		G or SC	1/5 YR
193-39-5	Indeno(1,2,3-cd)pyrene	625	20.0		G or SC	1/5 YR
78-59-1	Isophorone	625	10.0		G or SC	1/5 YR
98-95-3	Nitrobenzene	625	10.0		G or SC	1/5 YR
62-75-9	N-Nitrosodimethylamine	(4)	(5)		G or SC	1/5 YR
621-64-7	N-Nitrosodi-n-propylamine	(4)	(5)		G or SC	1/5 YR
86-30-6	N-Nitrosodiphenylamine	(4)	(5)		G or SC	1/5 YR
129-00-0	Pyrene	625	10.0		G or SC	1/5 YR

CASRN#	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL ⁽¹⁾	REPORTING RESULTS	SAMPLE TYPE ⁽²⁾	SAMPLE FREQUENCY
120-82-1	1,2,4-Trichlorobenzene	625	10.0		G or SC	1/5 YR
VOLATILES						
107-02-8	Acrolein	(4)	(5)		G	1/5 YR
107-13-1	Acrylonitrile	(4)	(5)		G	1/5 YR
71-43-2	Benzene	624	10.0		G	1/5 YR
75-25-2	Bromoform	624	10.0		G	1/5 YR
56-23-5	Carbon Tetrachloride	624	10.0		G	1/5 YR
108-90-7	Chlorobenzene (synonym = monochlorobenzene)	624	50.0		G	1/5 YR
124-48-1	Chlorodibromomethane	624	10.0		G	1/5 YR
67-66-3	Chloroform	624	10.0		G	1/5 YR
75-09-2	Dichloromethane (synonym = methylene chloride)	624	20.0		G	1/5 YR
75-27-4	Dichlorobromomethane	624	10.0		G	1/5 YR
107-06-2	1,2-Dichloroethane	624	10.0		G	1/5 YR
75-35-4	1,1-Dichloroethylene	624	10.0		G	1/5 YR
156-60-5	1,2-trans-dichloroethylene	(4)	(5)		G	1/5 YR
78-87-5	1,2-Dichloropropane	(4)	(5)		G	1/5 YR
542-75-6	1,3-Dichloropropene	(4)	(5)		G	1/5 YR
100-41-4	Ethylbenzene	624	10.0		G	1/5 YR
74-83-9	Methyl Bromide	(4)	(5)		G	1/5 YR
79-34-5	1,1,2,2-Tetrachloroethane	(4)	(5)		G	1/5 YR
127-18-4	Tetrachloroethylene	624	10.0		G	1/5 YR
10-88-3	Toluene	624	10.0		G	1/5 YR
79-00-5	1,1,2-Trichloroethane	(4)	(5)		G	1/5 YR
79-01-6	Trichloroethylene	624	10.0		G	1/5 YR
75-01-4	Vinyl Chloride	624	10.0		G	1/5 YR
RADIONUCLIDES						
	Strontium 90 (pCi/L)	(4)	(5)		G or C	1/5 YR
	Tritium (pCi/L)	(4)	(5)		G or C	1/5 YR
	Beta Particle & Photon Activity (mrem/yr)	(4)	(5)		G or C	1/5 YR

CASRN#	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL ⁽¹⁾	REPORTING RESULTS	SAMPLE TYPE ⁽²⁾	SAMPLE FREQUENCY
	Gross Alpha Particle Activity (pCi/L)	(4)	(5)		G or C	1/5 YR
ACID EXTRACTABLES ⁽⁶⁾						
95-57-8	2-Chlorophenol	625	10.0		G or SC	1/5 YR
120-83-2	2,4 Dichlorophenol	625	10.0		G or SC	1/5 YR
105-67-9	2,4 Dimethylphenol	625	10.0		G or SC	1/5 YR
51-28-5	2,4-Dinitrophenol	(4)	(5)		G or SC	1/5 YR
534-52-1	2-Methyl-4,6-Dinitrophenol	(4)	(5)		G or SC	1/5 YR
87-86-5	Pentachlorophenol	625	50.0		G or SC	1/5 YR
108-95-2	Phenol	625	10.0		G or SC	1/5 YR
88-06-2	2,4,6-Trichlorophenol	625	10.0		G or SC	1/5 YR
MISCELLANEOUS						
	Ammonia as NH ₃ -N, mg/l	350.1	200		C	1/5 YR
	Hardness, mg/l				C	1/5 YR
7782-50-5	Chlorine Produced Oxidant	(4)	(5)		G	1/5 YR
57-12-5	Cyanide, Total	(4)	10.0		G	1/5 YR
N/A	<i>Enterococci</i> (N/CML)	(4)	(5)		G	1/5 YR
7783-06-4	Hydrogen Sulfide	(4)	(5)		G or SC	1/5 YR
60-10-5	Tributyltin ⁽⁷⁾	NBSR 85-3295	(5)		G or C	1/5 YR

 Name of Principal Exec. Officer or Authorized Agent/Title

 Signature of Principal Officer or Authorized Agent/Date

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations. See 18 U.S.C. Sec. 1001 and 33 U.S.C. Sec. 1319. (Penalties under these statutes may include fines up to \$10,000 and or maximum imprisonment of between 6 months and 5 years.)

FOOTNOTES:

- (1) Quantification level (QL) is defined as the lowest concentration used for the calibration of a measurement system when the calibration is in accordance with the procedures published for the required method.

The quantification levels indicated for the metals are actually Specific Target Values developed for this permit. The Specific Target Value is the approximate value that may initiate a wasteload allocation analysis. Target values are not wasteload allocations or effluent limitations. The Specific Target Values are subject to change based on additional information such as hardness data, receiving stream flow, and design flows.

Units for the quantification level are micrograms/liter unless otherwise specified.

Quality control and quality assurance information shall be submitted to document that the required quantification level has been attained.

(2) Sample Type

G = Grab = An individual sample collected in less than 15 minutes. Substances specified with "grab" sample type shall only be collected as grabs. The permittee may analyze multiple grabs and report the average results provided that the individual grab results are also reported. For grab metals samples, the individual samples shall be filtered and preserved immediately upon collection.

C = Composite = A 24-hour composite unless otherwise specified. The composite shall be a combination of individual samples, taken proportional to flow, obtained at hourly or smaller time intervals. The individual samples may be of equal volume for flows that do not vary by +/- 10 percent over a 24-hour period.

SC = Special Composite = samples for base/neutral/acid compounds, PCBs, and pesticides must be collected as 4 individual grab samples taken proportional to flow at 6-hour intervals over the course of one day. The individual samples may be of equal volume for flows that do not vary by +/- 10 percent over a 24-hour period. Grab samples must be analyzed separately and the concentrations averaged. Alternately, grab samples may be collected in the field and composited in the laboratory if the compositing procedure produces results equivalent to results produced by arithmetic averaging of the results of analysis of individual grab samples.

- (3) A specific analytical method is not specified; however a target value for each metal has been established. An appropriate method to meet the target value shall be selected from the following list of EPA methods (or any approved method presented in 40 CFR Part 136). If the test result is less than the method QL, a "<[QL]" shall be reported where the actual analytical test QL is substituted for [QL].

<u>Metal</u>	<u>Analytical Method</u>
Antimony	1638; 1639
Arsenic	206.5; 1632
Chromium ⁽⁹⁾	1639
Cadmium	1637; 1638; 1639; 1640
Chromium VI	218.6; 1639
Copper	1638; 1640
Lead	1637; 1638; 1640
Mercury	245.7; 1631
Nickel	1638; 1639; 1640
Selenium	1638; 1639
Silver	1638
Zinc	1638; 1639

- (4) Any approved method presented in 40 CFR Part 136.
- (5) The QL is at the discretion of the permittee. For any substances addressed in 40 CFR Part 136, the permittee shall use one of the approved methods in 40 CFR Part 136.
- (6) Testing for phenol requires continuous extraction.
- (7) Analytical Methods: NBSR 85-3295 or DEQ's approved analysis for Tributyltin may also be used [See A Manual for the Analysis of Butyltins in Environmental Systems by the Virginia Institute of Marine Science, dated November 1996].

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- (8) Both Chromium III and Chromium VI may be measured by the total chromium analysis. If the result of the total chromium analysis is less than or equal to the lesser of the Chromium III or Chromium VI method QL, the results for both Chromium III and Chromium VI can be reported as "<[QL]", where the actual analytical test QL is substituted for [QL].
- (9) The lab may use SW846 Method 8270D provided the lab has an Initial Demonstration of Capability, has passed a PT for Kepone, and meets the acceptance criteria for Kepone as given in Method 8270D

All units are ug/l, unless noted.

**ATTACHMENT A
DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY CRITERIA MONITORING**

CASRN#	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL ⁽¹⁾	REPORTING RESULTS	SAMPLE TYPE ⁽²⁾	SAMPLE FREQUENCY
METALS						
7440-36-0	Antimony, dissolved	(3)	4.3 E +05		G or C	1/5 YR
7440-38-2	Arsenic, dissolved	(3)	2.2 E +03		G or C	1/5 YR
7440-43-9	Cadmium, dissolved	(3)	5.3 E +02		G or C	1/5 YR
16065-83-1	Chromium III, dissolved ⁽⁸⁾	(3)	(5)		G or C	1/5 YR
18540-29-9	Chromium VI, dissolved ⁽⁸⁾	(3)	3.0 E +03		G or C	1/5 YR
7440-50-8	Copper, dissolved	(3)	3.6 E +02		G or C	1/5 YR
7439-92-1	Lead, dissolved	(3)	5.6 E +02		G or C	1/5 YR
7439-97-6	Mercury, dissolved	(3)	5.1 E+00		G or C	1/5 YR
7440-02-0	Nickel, dissolved	(3)	4.9 E +02		G or C	1/5 YR
7782-49-2	Selenium, dissolved	(3)	4.3 E +03		G or C	1/5 YR
7440-22-4	Silver, dissolved	(3)	8.0 E+01		G or C	1/5 YR
7440-28-0	Thallium, dissolved	(4)	(5)		G or C	1/5 YR
7440-66-6	Zinc, dissolved	(3)	3.6 E +03		G or C	1/5 YR
PESTICIDES/PCB'S						
309-00-2	Aldrin	608	0.05		G or SC	1/5 YR
57-74-9	Chlordane	608	0.2		G or SC	1/5 YR
2921-88-2	Chlorpyrifos (synonym = Dursban)	622	(5)		G or SC	1/5 YR
72-54-8	DDD	608	0.1		G or SC	1/5 YR
72-55-9	DDE	608	0.1		G or SC	1/5 YR
50-29-3	DDT	608	0.1		G or SC	1/5 YR
8065-48-3	Demeton	(4)	(5)		G or SC	1/5 YR
60-57-1	Dieldrin	608	0.1		G or SC	1/5 YR
959-98-8	Alpha-Endosulfan	608	0.1		G or SC	1/5 YR
33213-65-9	Beta-Endosulfan	608	0.1		G or SC	1/5 YR
1031-07-8	Endosulfan Sulfate	608	0.1		G or SC	1/5 YR

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CASRN#	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL ⁽¹⁾	REPORTING RESULTS	SAMPLE TYPE ⁽²⁾	SAMPLE FREQUENCY
72-20-8	Endrin	608	0.1		G or SC	1/5 YR
7421-93-4	Endrin Aldehyde	(4)	(5)		G or SC	1/5 YR
86-50-0	Guthion	622	(5)		G or SC	1/5 YR
76-44-8	Heptachlor	608	0.05		G or SC	1/5 YR
1024-57-3	Heptachlor Epoxide	(4)	(5)		G or SC	1/5 YR
319-84-6	Hexachlorocyclohexane Alpha-BHC	608	(5)		G or SC	1/5 YR
319-85-7	Hexachlorocyclohexane Beta-BHC	608	(5)		G or SC	1/5 YR
58-89-9	Hexachlorocyclohexane Gamma-BHC or Lindane	608	(5)		G or SC	1/5 YR
143-50-0	Kepone	(9)	(5)		G or SC	1/5 YR
121-75-5	Malathion	(4)	(5)		G or SC	1/5 YR
72-43-5	Methoxychlor	(4)	(5)		G or SC	1/5 YR
2385-85-5	Mirex	(4)	(5)		G or SC	1/5 YR
56-38-2	Parathion	(4)	(5)		G or SC	1/5 YR
11096-82-5	PCB 1260	608	1.0		G or SC	1/5 YR
11097-69-1	PCB 1254	608	1.0		G or SC	1/5 YR
12672-29-6	PCB 1248	608	1.0		G or SC	1/5 YR
53469-21-9	PCB 1242	608	1.0		G or SC	1/5 YR
11141-16-5	PCB 1232	608	1.0		G or SC	1/5 YR
11104-28-2	PCB 1221	608	1.0		G or SC	1/5 YR
12674-11-2	PCB 1016	608	1.0		G or SC	1/5 YR
1336-36-3	PCB Total	608	7.0		G or SC	1/5 YR
8001-35-2	Toxaphene	608	5.0		G or SC	1/5 YR
BASE NEUTRAL EXTRACTABLES						
83-32-9	Acenaphthene	625	10.0		G or SC	1/5 YR
120-12-7	Anthracene	625	10.0		G or SC	1/5 YR
92-87-5	Benzidine	(4)	(5)		G or SC	1/5 YR
56-55-3	Benzo (a) anthracene	625	10.0		G or SC	1/5 YR
205-99-2	Benzo (b) fluoranthene	625	10.0		G or SC	1/5 YR
207-08-9	Benzo (k) fluoranthene	625	10.0		G or SC	1/5 YR

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CASRN#	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL ⁽¹⁾	REPORTING RESULTS	SAMPLE TYPE ⁽²⁾	SAMPLE FREQUENCY
50-32-8	Benzo (a) pyrene	625	10.0		G or SC	1/5 YR
111-44-4	Bis 2-Chloroethyl Ether	(4)	(5)		G or SC	1/5 YR
39638-32-9	Bis 2-Chloroisopropyl Ether	(4)	(5)		G or SC	1/5 YR
85-68-7	Butyl benzyl phthalate	625	10.0		G or SC	1/5 YR
91-58-7	2-Chloronaphthalene	(4)	(5)		G or SC	1/5 YR
218-01-9	Chrysene	625	10.0		G or SC	1/5 YR
53-70-3	Dibenz(a,h)anthracene	625	20.0		G or SC	1/5 YR
84-74-2	Dibutyl phthalate (synonym = Di-n-Butyl Phthalate)	625	10.0		G or SC	1/5 YR
95-50-1	1,2-Dichlorobenzene	624	10.0		G or SC	1/5 YR
541-73-1	1,3-Dichlorobenzene	624	10.0		G or SC	1/5 YR
106-46-7	1,4-Dichlorobenzene	624	10.0		G or SC	1/5 YR
91-94-1	3,3-Dichlorobenzidine	(4)	(5)		G or SC	1/5 YR
84-66-2	Diethyl phthalate	625	10.0		G or SC	1/5 YR
117-81-7	Di-2-Ethylhexyl Phthalate	625	10.0		G or SC	1/5 YR
131-11-3	Dimethyl phthalate	(4)	(5)		G or SC	1/5 YR
121-14-2	2,4-Dinitrotoluene	625	10.0		G or SC	1/5 YR
122-66-7	1,2-Diphenylhydrazine	(4)	(5)		G or SC	1/5 YR
206-44-0	Fluoranthene	625	10.0		G or SC	1/5 YR
86-73-7	Fluorene	625	10.0		G or SC	1/5 YR
118-74-1	Hexachlorobenzene	(4)	(5)		G or SC	1/5 YR
87-68-3	Hexachlorobutadiene	(4)	(5)		G or SC	1/5 YR
77-47-4	Hexachlorocyclopentadiene	(4)	(5)		G or SC	1/5 YR
67-72-1	Hexachloroethane	(4)	(5)		G or SC	1/5 YR
193-39-5	Indeno(1,2,3-cd)pyrene	625	20.0		G or SC	1/5 YR
78-59-1	Isophorone	625	10.0		G or SC	1/5 YR
98-95-3	Nitrobenzene	625	10.0		G or SC	1/5 YR
62-75-9	N-Nitrosodimethylamine	(4)	(5)		G or SC	1/5 YR
621-64-7	N-Nitrosodi-n-propylamine	(4)	(5)		G or SC	1/5 YR
86-30-6	N-Nitrosodiphenylamine	(4)	(5)		G or SC	1/5 YR
129-00-0	Pyrene	625	10.0		G or SC	1/5 YR

CASRN#	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL ⁽¹⁾	REPORTING RESULTS	SAMPLE TYPE ⁽²⁾	SAMPLE FREQUENCY
120-82-1	1,2,4-Trichlorobenzene	625	10.0		G or SC	1/5 YR
VOLATILES						
107-02-8	Acrolein	(4)	(5)		G	1/5 YR
107-13-1	Acrylonitrile	(4)	(5)		G	1/5 YR
71-43-2	Benzene	624	10.0		G	1/5 YR
75-25-2	Bromoform	624	10.0		G	1/5 YR
56-23-5	Carbon Tetrachloride	624	10.0		G	1/5 YR
108-90-7	Chlorobenzene (synonym = monochlorobenzene)	624	50.0		G	1/5 YR
124-48-1	Chlorodibromomethane	624	10.0		G	1/5 YR
67-66-3	Chloroform	624	10.0		G	1/5 YR
75-09-2	Dichloromethane (synonym = methylene chloride)	624	20.0		G	1/5 YR
75-27-4	Dichlorobromomethane	624	10.0		G	1/5 YR
107-06-2	1,2-Dichloroethane	624	10.0		G	1/5 YR
75-35-4	1,1-Dichloroethylene	624	10.0		G	1/5 YR
156-60-5	1,2-trans-dichloroethylene	(4)	(5)		G	1/5 YR
78-87-5	1,2-Dichloropropane	(4)	(5)		G	1/5 YR
542-75-6	1,3-Dichloropropene	(4)	(5)		G	1/5 YR
100-41-4	Ethylbenzene	624	10.0		G	1/5 YR
74-83-9	Methyl Bromide	(4)	(5)		G	1/5 YR
79-34-5	1,1,2,2-Tetrachloroethane	(4)	(5)		G	1/5 YR
127-18-4	Tetrachloroethylene	624	10.0		G	1/5 YR
10-88-3	Toluene	624	10.0		G	1/5 YR
79-00-5	1,1,2-Trichloroethane	(4)	(5)		G	1/5 YR
79-01-6	Trichloroethylene	624	10.0		G	1/5 YR
75-01-4	Vinyl Chloride	624	10.0		G	1/5 YR
RADIONUCLIDES						
	Strontium 90 (pCi/L)	(4)	(5)		G or C	1/5 YR
	Tritium (pCi/L)	(4)	(5)		G or C	1/5 YR
	Beta Particle & Photon Activity (mrem/yr)	(4)	(5)		G or C	1/5 YR

CASRN#	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL ⁽¹⁾	REPORTING RESULTS	SAMPLE TYPE ⁽²⁾	SAMPLE FREQUENCY
	Gross Alpha Particle Activity (pCi/L)	(4)	(5)		G or C	1/5 YR
ACID EXTRACTABLES ⁽⁶⁾						
95-57-8	2-Chlorophenol	625	10.0		G or SC	1/5 YR
120-83-2	2,4 Dichlorophenol	625	10.0		G or SC	1/5 YR
105-67-9	2,4 Dimethylphenol	625	10.0		G or SC	1/5 YR
51-28-5	2,4-Dinitrophenol	(4)	(5)		G or SC	1/5 YR
534-52-1	2-Methyl-4,6-Dinitrophenol	(4)	(5)		G or SC	1/5 YR
87-86-5	Pentachlorophenol	625	50.0		G or SC	1/5 YR
108-95-2	Phenol	625	10.0		G or SC	1/5 YR
88-06-2	2,4,6-Trichlorophenol	625	10.0		G or SC	1/5 YR
MISCELLANEOUS						
	Ammonia as NH ₃ -N, mg/l	350.1	200		C	1/5 YR
	Hardness, mg/l				C	1/5 YR
7782-50-5	Chlorine Produced Oxidant	(4)	(5)		G	1/5 YR
57-12-5	Cyanide, Total	(4)	10.0		G	1/5 YR
N/A	<i>Enterococci</i> (N/CML)	(4)	(5)		G	1/5 YR
7783-06-4	Hydrogen Sulfide	(4)	(5)		G or SC	1/5 YR
60-10-5	Tributyltin ⁽⁷⁾	NBSR 85-3295	(5)		G or C	1/5 YR

Name of Principal Exec. Officer or Authorized Agent/Title

Signature of Principal Officer or Authorized Agent/Date

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations. See 18 U.S.C. Sec. 1001 and 33 U.S.C. Sec. 1319. (Penalties under these statutes may include fines up to \$10,000 and or maximum imprisonment of between 6 months and 5 years.)

FOOTNOTES:

- (1) Quantification level (QL) is defined as the lowest concentration used for the calibration of a measurement system when the calibration is in accordance with the procedures published for the required method.

The quantification levels indicated for the metals are actually Specific Target Values developed for this permit. The Specific Target Value is the approximate value that may initiate a wasteload allocation analysis. Target values are not wasteload allocations or effluent limitations. The Specific Target Values are subject to change based on additional information such as hardness data, receiving stream flow, and design flows.

Units for the quantification level are micrograms/liter unless otherwise specified.

Quality control and quality assurance information shall be submitted to document that the required quantification level has been attained.

(2) Sample Type

G = Grab = An individual sample collected in less than 15 minutes. Substances specified with "grab" sample type shall only be collected as grabs. The permittee may analyze multiple grabs and report the average results provided that the individual grab results are also reported. For grab metals samples, the individual samples shall be filtered and preserved immediately upon collection.

C = Composite = A 24-hour composite unless otherwise specified. The composite shall be a combination of individual samples, taken proportional to flow, obtained at hourly or smaller time intervals. The individual samples may be of equal volume for flows that do not vary by +/- 10 percent over a 24-hour period.

SC = Special Composite = samples for base/neutral/acid compounds, PCBs, and pesticides must be collected as 4 individual grab samples taken proportional to flow at 6-hour intervals over the course of one day. The individual samples may be of equal volume for flows that do not vary by +/- 10 percent over a 24-hour period. Grab samples must be analyzed separately and the concentrations averaged. Alternately, grab samples may be collected in the field and composited in the laboratory if the compositing procedure produces results equivalent to results produced by arithmetic averaging of the results of analysis of individual grab samples.

- (3) A specific analytical method is not specified; however a target value for each metal has been established. An appropriate method to meet the target value shall be selected from the following list of EPA methods (or any approved method presented in 40 CFR Part 136). If the test result is less than the method QL, a "<[QL]" shall be reported where the actual analytical test QL is substituted for [QL].

<u>Metal</u>	<u>Analytical Method</u>
Antimony	1638; 1639
Arsenic	206.5; 1632
Chromium ⁽⁹⁾	1639
Cadmium	1637; 1638; 1639; 1640
Chromium VI	218.6; 1639
Copper	1638; 1640
Lead	1637; 1638; 1640
Mercury	245.7; 1631
Nickel	1638; 1639; 1640
Selenium	1638; 1639
Silver	1638
Zinc	1638; 1639

- (4) Any approved method presented in 40 CFR Part 136.
- (5) The QL is at the discretion of the permittee. For any substances addressed in 40 CFR Part 136, the permittee shall use one of the approved methods in 40 CFR Part 136.
- (6) Testing for phenol requires continuous extraction.
- (7) Analytical Methods: NBSR 85-3295 or DEQ's approved analysis for Tributyltin may also be used [See A Manual for the Analysis of Butyltins in Environmental Systems by the Virginia Institute of Marine Science, dated November 1996].

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- (8) Both Chromium III and Chromium VI may be measured by the total chromium analysis. If the result of the total chromium analysis is less than or equal to the lesser of the Chromium III or Chromium VI method QL, the results for both Chromium III and Chromium VI can be reported as "<[QL]", where the actual analytical test QL is substituted for [QL].
- (9) The lab may use SW846 Method 8270D provided the lab has an Initial Demonstration of Capability, has passed a PT for Kepone, and meets the acceptance criteria for Kepone as given in Method 8270D

All units are ug/l, unless noted.

**ATTACHMENT A
DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY CRITERIA MONITORING**

CASRN#	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL ⁽¹⁾	REPORTING RESULTS	SAMPLE TYPE ⁽²⁾	SAMPLE FREQUENCY
METALS						
7440-36-0	Antimony, dissolved	(3)	1.2 E +05		G or C	1/5 YR
7440-38-2	Arsenic, dissolved	(3)	6.0 E +02		G or C	1/5 YR
7440-43-9	Cadmium, dissolved	(3)	1.5 E +02		G or C	1/5 YR
16065-83-1	Chromium III, dissolved ⁽⁸⁾	(3)	(5)		G or C	1/5 YR
18540-29-9	Chromium VI, dissolved ⁽⁸⁾	(3)	8.4 E +02		G or C	1/5 YR
7440-50-8	Copper, dissolved	(3)	1.0 E +02		G or C	1/5 YR
7439-92-1	Lead, dissolved	(3)	1.6 E +02		G or C	1/5 YR
7439-97-6	Mercury, dissolved	(3)	1.4 E+00		G or C	1/5 YR
7440-02-0	Nickel, dissolved	(3)	1.4 E +02		G or C	1/5 YR
7782-49-2	Selenium, dissolved	(3)	1.2 E +03		G or C	1/5 YR
7440-22-4	Silver, dissolved	(3)	2.2 E+01		G or C	1/5 YR
7440-28-0	Thallium, dissolved	(4)	(5)		G or C	1/5 YR
7440-66-6	Zinc, dissolved	(3)	1.0 E +03		G or C	1/5 YR
PESTICIDES/PCB'S						
309-00-2	Aldrin	608	0.05		G or SC	1/5 YR
57-74-9	Chlordane	608	0.2		G or SC	1/5 YR
2921-88-2	Chlorpyrifos (synonym = Dursban)	622	(5)		G or SC	1/5 YR
72-54-8	DDD	608	0.1		G or SC	1/5 YR
72-55-9	DDE	608	0.1		G or SC	1/5 YR
50-29-3	DDT	608	0.1		G or SC	1/5 YR
8065-48-3	Demeton	(4)	(5)		G or SC	1/5 YR
60-57-1	Dieldrin	608	0.1		G or SC	1/5 YR
959-98-8	Alpha-Endosulfan	608	0.1		G or SC	1/5 YR
33213-65-9	Beta-Endosulfan	608	0.1		G or SC	1/5 YR
1031-07-8	Endosulfan Sulfate	608	0.1		G or SC	1/5 YR

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CASRN#	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL ⁽¹⁾	REPORTING RESULTS	SAMPLE TYPE ⁽²⁾	SAMPLE FREQUENCY
72-20-8	Endrin	608	0.1		G or SC	1/5 YR
7421-93-4	Endrin Aldehyde	(4)	(5)		G or SC	1/5 YR
86-50-0	Guthion	622	(5)		G or SC	1/5 YR
76-44-8	Heptachlor	608	0.05		G or SC	1/5 YR
1024-57-3	Heptachlor Epoxide	(4)	(5)		G or SC	1/5 YR
319-84-6	Hexachlorocyclohexane Alpha-BHC	608	(5)		G or SC	1/5 YR
319-85-7	Hexachlorocyclohexane Beta-BHC	608	(5)		G or SC	1/5 YR
58-89-9	Hexachlorocyclohexane Gamma-BHC or Lindane	608	(5)		G or SC	1/5 YR
143-50-0	Kepone	(9)	(5)		G or SC	1/5 YR
121-75-5	Malathion	(4)	(5)		G or SC	1/5 YR
72-43-5	Methoxychlor	(4)	(5)		G or SC	1/5 YR
2385-85-5	Mirex	(4)	(5)		G or SC	1/5 YR
56-38-2	Parathion	(4)	(5)		G or SC	1/5 YR
11096-82-5	PCB 1260	608	1.0		G or SC	1/5 YR
11097-69-1	PCB 1254	608	1.0		G or SC	1/5 YR
12672-29-6	PCB 1248	608	1.0		G or SC	1/5 YR
53469-21-9	PCB 1242	608	1.0		G or SC	1/5 YR
11141-16-5	PCB 1232	608	1.0		G or SC	1/5 YR
11104-28-2	PCB 1221	608	1.0		G or SC	1/5 YR
12674-11-2	PCB 1016	608	1.0		G or SC	1/5 YR
1336-36-3	PCB Total	608	7.0		G or SC	1/5 YR
8001-35-2	Toxaphene	608	5.0		G or SC	1/5 YR
BASE NEUTRAL EXTRACTABLES						
83-32-9	Acenaphthene	625	10.0		G or SC	1/5 YR
120-12-7	Anthracene	625	10.0		G or SC	1/5 YR
92-87-5	Benzidine	(4)	(5)		G or SC	1/5 YR
56-55-3	Benzo (a) anthracene	625	10.0		G or SC	1/5 YR
205-99-2	Benzo (b) fluoranthene	625	10.0		G or SC	1/5 YR
207-08-9	Benzo (k) fluoranthene	625	10.0		G or SC	1/5 YR

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CASRN#	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL ⁽¹⁾	REPORTING RESULTS	SAMPLE TYPE ⁽²⁾	SAMPLE FREQUENCY
50-32-8	Benzo (a) pyrene	625	10.0		G or SC	1/5 YR
111-44-4	Bis 2-Chloroethyl Ether	(4)	(5)		G or SC	1/5 YR
39638-32-9	Bis 2-Chloroisopropyl Ether	(4)	(5)		G or SC	1/5 YR
85-68-7	Butyl benzyl phthalate	625	10.0		G or SC	1/5 YR
91-58-7	2-Chloronaphthalene	(4)	(5)		G or SC	1/5 YR
218-01-9	Chrysene	625	10.0		G or SC	1/5 YR
53-70-3	Dibenz(a,h)anthracene	625	20.0		G or SC	1/5 YR
84-74-2	Dibutyl phthalate (synonym = Di-n-Butyl Phthalate)	625	10.0		G or SC	1/5 YR
95-50-1	1,2-Dichlorobenzene	624	10.0		G or SC	1/5 YR
541-73-1	1,3-Dichlorobenzene	624	10.0		G or SC	1/5 YR
106-46-7	1,4-Dichlorobenzene	624	10.0		G or SC	1/5 YR
91-94-1	3,3-Dichlorobenzidine	(4)	(5)		G or SC	1/5 YR
84-66-2	Diethyl phthalate	625	10.0		G or SC	1/5 YR
117-81-7	Di-2-Ethylhexyl Phthalate	625	10.0		G or SC	1/5 YR
131-11-3	Dimethyl phthalate	(4)	(5)		G or SC	1/5 YR
121-14-2	2,4-Dinitrotoluene	625	10.0		G or SC	1/5 YR
122-66-7	1,2-Diphenylhydrazine	(4)	(5)		G or SC	1/5 YR
206-44-0	Fluoranthene	625	10.0		G or SC	1/5 YR
86-73-7	Fluorene	625	10.0		G or SC	1/5 YR
118-74-1	Hexachlorobenzene	(4)	(5)		G or SC	1/5 YR
87-68-3	Hexachlorobutadiene	(4)	(5)		G or SC	1/5 YR
77-47-4	Hexachlorocyclopentadiene	(4)	(5)		G or SC	1/5 YR
67-72-1	Hexachloroethane	(4)	(5)		G or SC	1/5 YR
193-39-5	Indeno(1,2,3-cd)pyrene	625	20.0		G or SC	1/5 YR
78-59-1	Isophorone	625	10.0		G or SC	1/5 YR
98-95-3	Nitrobenzene	625	10.0		G or SC	1/5 YR
62-75-9	N-Nitrosodimethylamine	(4)	(5)		G or SC	1/5 YR
621-64-7	N-Nitrosodi-n-propylamine	(4)	(5)		G or SC	1/5 YR
86-30-6	N-Nitrosodiphenylamine	(4)	(5)		G or SC	1/5 YR
129-00-0	Pyrene	625	10.0		G or SC	1/5 YR

CASRN#	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL ⁽¹⁾	REPORTING RESULTS	SAMPLE TYPE ⁽²⁾	SAMPLE FREQUENCY
120-82-1	1,2,4-Trichlorobenzene	625	10.0		G or SC	1/5 YR
VOLATILES						
107-02-8	Acrolein	(4)	(5)		G	1/5 YR
107-13-1	Acrylonitrile	(4)	(5)		G	1/5 YR
71-43-2	Benzene	624	10.0		G	1/5 YR
75-25-2	Bromoform	624	10.0		G	1/5 YR
56-23-5	Carbon Tetrachloride	624	10.0		G	1/5 YR
108-90-7	Chlorobenzene (synonym = monochlorobenzene)	624	50.0		G	1/5 YR
124-48-1	Chlorodibromomethane	624	10.0		G	1/5 YR
67-66-3	Chloroform	624	10.0		G	1/5 YR
75-09-2	Dichloromethane (synonym = methylene chloride)	624	20.0		G	1/5 YR
75-27-4	Dichlorobromomethane	624	10.0		G	1/5 YR
107-06-2	1,2-Dichloroethane	624	10.0		G	1/5 YR
75-35-4	1,1-Dichloroethylene	624	10.0		G	1/5 YR
156-60-5	1,2-trans-dichloroethylene	(4)	(5)		G	1/5 YR
78-87-5	1,2-Dichloropropane	(4)	(5)		G	1/5 YR
542-75-6	1,3-Dichloropropene	(4)	(5)		G	1/5 YR
100-41-4	Ethylbenzene	624	10.0		G	1/5 YR
74-83-9	Methyl Bromide	(4)	(5)		G	1/5 YR
79-34-5	1,1,2,2-Tetrachloroethane	(4)	(5)		G	1/5 YR
127-18-4	Tetrachloroethylene	624	10.0		G	1/5 YR
10-88-3	Toluene	624	10.0		G	1/5 YR
79-00-5	1,1,2-Trichloroethane	(4)	(5)		G	1/5 YR
79-01-6	Trichloroethylene	624	10.0		G	1/5 YR
75-01-4	Vinyl Chloride	624	10.0		G	1/5 YR
RADIONUCLIDES						
	Strontium 90 (pCi/L)	(4)	(5)		G or C	1/5 YR
	Tritium (pCi/L)	(4)	(5)		G or C	1/5 YR
	Beta Particle & Photon Activity (mrem/yr)	(4)	(5)		G or C	1/5 YR

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	Gross Alpha Particle Activity (pCi/L)	(4)	(5)		G or C	1/5 YR
ACID EXTRACTABLES⁽⁶⁾						
95-57-8	2-Chlorophenol	625	10.0		G or SC	1/5 YR
120-83-2	2,4 Dichlorophenol	625	10.0		G or SC	1/5 YR
105-67-9	2,4 Dimethylphenol	625	10.0		G or SC	1/5 YR
51-28-5	2,4-Dinitrophenol	(4)	(5)		G or SC	1/5 YR
534-52-1	2-Methyl-4,6-Dinitrophenol	(4)	(5)		G or SC	1/5 YR
87-86-5	Pentachlorophenol	625	50.0		G or SC	1/5 YR
108-95-2	Phenol	625	10.0		G or SC	1/5 YR
88-06-2	2,4,6-Trichlorophenol	625	10.0		G or SC	1/5 YR
MISCELLANEOUS						
	Ammonia as NH3-N, mg/l	350.1	200		C	1/5 YR
	Hardness, mg/l				C	1/5 YR
7782-50-5	Chlorine Produced Oxidant	(4)	(5)		G	1/5 YR
57-12-5	Cyanide, Total	(4)	10.0		G	1/5 YR
N/A	<i>Enterococci</i> (N/CML)	(4)	(5)		G	1/5 YR
7783-06-4	Hydrogen Sulfide	(4)	(5)		G or SC	1/5 YR
60-10-5	Tributyltin ⁽⁷⁾	NBSR 85-3295	(5)		G or C	1/5 YR

Name of Principal Exec. Officer or Authorized Agent/Title

Signature of Principal Officer or Authorized Agent/Date

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FOOTNOTES:

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C = Composite = A 24-hour composite unless otherwise specified. The composite shall be a combination of individual samples, taken proportional to flow, obtained at hourly or smaller time intervals. The individual samples may be of equal volume for flows that do not vary by +/- 10 percent over a 24-hour period.

SC = Special Composite = samples for base/neutral/acid compounds, PCBs, and pesticides must be collected as 4 individual grab samples taken proportional to flow at 6-hour intervals over the course of one day. The individual samples may be of equal volume for flows that do not vary by +/- 10 percent over a 24-hour period. Grab samples must be analyzed separately and the concentrations averaged. Alternately, grab samples may be collected in the field and composited in the laboratory if the compositing procedure produces results equivalent to results produced by arithmetic averaging of the results of analysis of individual grab samples.

- (3) A specific analytical method is not specified; however a target value for each metal has been established. An appropriate method to meet the target value shall be selected from the following list of EPA methods (or any approved method presented in 40 CFR Part 136). If the test result is less than the method QL, a "<[QL]" shall be reported where the actual analytical test QL is substituted for [QL].

<u>Metal</u>	<u>Analytical Method</u>
Antimony	1638; 1639
Arsenic	206.5; 1632
Chromium ⁽⁹⁾	1639
Cadmium	1637; 1638; 1639; 1640
Chromium VI	218.6; 1639
Copper	1638; 1640
Lead	1637; 1638; 1640
Mercury	245.7; 1631
Nickel	1638; 1639; 1640
Selenium	1638; 1639
Silver	1638
Zinc	1638; 1639

- (4) Any approved method presented in 40 CFR Part 136.
- (5) The QL is at the discretion of the permittee. For any substances addressed in 40 CFR Part 136, the permittee shall use one of the approved methods in 40 CFR Part 136.
- (6) Testing for phenol requires continuous extraction.
- (7) Analytical Methods: NBSR 85-3295 or DEQ's approved analysis for Tributyltin may also be used (See A Manual for the Analysis of Butyltins in Environmental Systems by the Virginia Institute of Marine Science, dated November 1996).

VA0003867 Omega Protein
Outfall _003_

- (8) Both Chromium III and Chromium VI may be measured by the total chromium analysis. If the result of the total chromium analysis is less than or equal to the lesser of the Chromium III or Chromium VI method QL, the results for both Chromium III and Chromium VI can be reported as "<[QL]", where the actual analytical test QL is substituted for [QL].
- (9) The lab may use SW846 Method 8270D provided the lab has an Initial Demonstration of Capability, has passed a PT for Kepone, and meets the acceptance criteria for Kepone as given in Method 8270D

All units are ug/l, unless noted.

ATTACHMENT A
DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY CRITERIA MONITORING

CASRN#	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL ⁽¹⁾	REPORTING RESULTS	SAMPLE TYPE ⁽²⁾	SAMPLE FREQUENCY
METALS						
7440-36-0	Antimony, dissolved	(3)	2.2 E +05		G or C	1/5 YR
7440-38-2	Arsenic, dissolved	(3)	5.5 E +01		G or C	1/5 YR
7440-43-9	Cadmium, dissolved	(3)	3.2 E +01		G or C	1/5 YR
16065-83-1	Chromium III, dissolved ⁽⁸⁾	(3)	(5)		G or C	1/5 YR
18540-29-9	Chromium VI, dissolved ⁽⁸⁾	(3)	8.8 E +02		G or C	1/5 YR
7440-50-8	Copper, dissolved	(3)	7.4 E +00		G or C	1/5 YR
7439-92-1	Lead, dissolved	(3)	1.9 E +02		G or C	1/5 YR
7439-97-6	Mercury, dissolved	(3)	1.4 E+00		G or C	1/5 YR
7440-02-0	Nickel, dissolved	(3)	5.9 E +01		G or C	1/5 YR
7782-49-2	Selenium, dissolved	(3)	2.4 E +02		G or C	1/5 YR
7440-22-4	Silver, dissolved	(3)	1.6 E+00		G or C	1/5 YR
7440-28-0	Thallium, dissolved	(4)	(5)		G or C	1/5 YR
7440-66-6	Zinc, dissolved	(3)	7.2 E +01		G or C	1/5 YR
PESTICIDES/PCB'S						
309-00-2	Aldrin	608	0.05		G or SC	1/5 YR
57-74-9	Chlordane	608	0.2		G or SC	1/5 YR
2921-88-2	Chlorpyrifos (synonym = Dursban)	622	(5)		G or SC	1/5 YR
72-54-8	DDD	608	0.1		G or SC	1/5 YR
72-55-9	DDE	608	0.1		G or SC	1/5 YR
50-29-3	DDT	608	0.1		G or SC	1/5 YR
8065-48-3	Demeton	(4)	(5)		G or SC	1/5 YR
60-57-1	Dieldrin	608	0.1		G or SC	1/5 YR
959-98-8	Alpha-Endosulfan	608	0.1		G or SC	1/5 YR
33213-65-9	Beta-Endosulfan	608	0.1		G or SC	1/5 YR
1031-07-8	Endosulfan Sulfate	608	0.1		G or SC	1/5 YR

CASRN#	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL ⁽¹⁾	REPORTING RESULTS	SAMPLE TYPE ⁽²⁾	SAMPLE FREQUENCY
72-20-8	Endrin	608	0.1		G or SC	1/5 YR
7421-93-4	Endrin Aldehyde	(4)	(5)		G or SC	1/5 YR
86-50-0	Guthion	622	(5)		G or SC	1/5 YR
76-44-8	Heptachlor	608	0.05		G or SC	1/5 YR
1024-57-3	Heptachlor Epoxide	(4)	(5)		G or SC	1/5 YR
319-84-6	Hexachlorocyclohexane Alpha-BHC	608	(5)		G or SC	1/5 YR
319-85-7	Hexachlorocyclohexane Beta-BHC	608	(5)		G or SC	1/5 YR
58-89-9	Hexachlorocyclohexane Gamma-BHC or Lindane	608	(5)		G or SC	1/5 YR
143-50-0	Kepone	(9)	(5)		G or SC	1/5 YR
121-75-5	Malathion	(4)	(5)		G or SC	1/5 YR
72-43-5	Methoxychlor	(4)	(5)		G or SC	1/5 YR
2385-85-5	Mirex	(4)	(5)		G or SC	1/5 YR
56-38-2	Parathion	(4)	(5)		G or SC	1/5 YR
11096-82-5	PCB 1260	608	1.0		G or SC	1/5 YR
11097-69-1	PCB 1254	608	1.0		G or SC	1/5 YR
12672-29-6	PCB 1248	608	1.0		G or SC	1/5 YR
53469-21-9	PCB 1242	608	1.0		G or SC	1/5 YR
11141-16-5	PCB 1232	608	1.0		G or SC	1/5 YR
11104-28-2	PCB 1221	608	1.0		G or SC	1/5 YR
12674-11-2	PCB 1016	608	1.0		G or SC	1/5 YR
1336-36-3	PCB Total	608	7.0		G or SC	1/5 YR
8001-35-2	Toxaphene	608	5.0		G or SC	1/5 YR
BASE NEUTRAL EXTRACTABLES						
83-32-9	Acenaphthene	625	10.0		G or SC	1/5 YR
120-12-7	Anthracene	625	10.0		G or SC	1/5 YR
92-87-5	Benzidine	(4)	(5)		G or SC	1/5 YR
56-55-3	Benzo (a) anthracene	625	10.0		G or SC	1/5 YR
205-99-2	Benzo (b) fluoranthene	625	10.0		G or SC	1/5 YR
207-08-9	Benzo (k) fluoranthene	625	10.0		G or SC	1/5 YR

VA0003867 Omega Protein
Outfall _995_

CASRN#	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL ⁽¹⁾	REPORTING RESULTS	SAMPLE TYPE ⁽²⁾	SAMPLE FREQUENCY
50-32-8	Benzo (a) pyrene	625	10.0		G or SC	1/5 YR
111-44-4	Bis 2-Chloroethyl Ether	(4)	(5)		G or SC	1/5 YR
39638-32-9	Bis 2-Chloroisopropyl Ether	(4)	(5)		G or SC	1/5 YR
85-68-7	Butyl benzyl phthalate	625	10.0		G or SC	1/5 YR
91-58-7	2-Chloronaphthalene	(4)	(5)		G or SC	1/5 YR
218-01-9	Chrysene	625	10.0		G or SC	1/5 YR
53-70-3	Dibenz(a,h)anthracene	625	20.0		G or SC	1/5 YR
84-74-2	Dibutyl phthalate (synonym = Di-n-Butyl Phthalate)	625	10.0		G or SC	1/5 YR
95-50-1	1,2-Dichlorobenzene	624	10.0		G or SC	1/5 YR
541-73-1	1,3-Dichlorobenzene	624	10.0		G or SC	1/5 YR
106-46-7	1,4-Dichlorobenzene	624	10.0		G or SC	1/5 YR
91-94-1	3,3-Dichlorobenzidine	(4)	(5)		G or SC	1/5 YR
84-66-2	Diethyl phthalate	625	10.0		G or SC	1/5 YR
117-81-7	Di-2-Ethylhexyl Phthalate	625	10.0		G or SC	1/5 YR
131-11-3	Dimethyl phthalate	(4)	(5)		G or SC	1/5 YR
121-14-2	2,4-Dinitrotoluene	625	10.0		G or SC	1/5 YR
122-66-7	1,2-Diphenylhydrazine	(4)	(5)		G or SC	1/5 YR
206-44-0	Fluoranthene	625	10.0		G or SC	1/5 YR
86-73-7	Fluorene	625	10.0		G or SC	1/5 YR
118-74-1	Hexachlorobenzene	(4)	(5)		G or SC	1/5 YR
87-68-3	Hexachlorobutadiene	(4)	(5)		G or SC	1/5 YR
77-47-4	Hexachlorocyclopentadiene	(4)	(5)		G or SC	1/5 YR
67-72-1	Hexachloroethane	(4)	(5)		G or SC	1/5 YR
193-39-5	Indeno(1,2,3-cd)pyrene	625	20.0		G or SC	1/5 YR
78-59-1	Isophorone	625	10.0		G or SC	1/5 YR
98-95-3	Nitrobenzene	625	10.0		G or SC	1/5 YR
62-75-9	N-Nitrosodimethylamine	(4)	(5)		G or SC	1/5 YR
621-64-7	N-Nitrosodi-n-propylamine	(4)	(5)		G or SC	1/5 YR
86-30-6	N-Nitrosodiphenylamine	(4)	(5)		G or SC	1/5 YR
129-00-0	Pyrene	625	10.0		G or SC	1/5 YR

CASRN#	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL ⁽¹⁾	REPORTING RESULTS	SAMPLE TYPE ⁽²⁾	SAMPLE FREQUENCY
120-82-1	1,2,4-Trichlorobenzene	625	10.0		G or SC	1/5 YR
VOLATILES						
107-02-8	Acrolein	(4)	(5)		G	1/5 YR
107-13-1	Acrylonitrile	(4)	(5)		G	1/5 YR
71-43-2	Benzene	624	10.0		G	1/5 YR
75-25-2	Bromoform	624	10.0		G	1/5 YR
56-23-5	Carbon Tetrachloride	624	10.0		G	1/5 YR
108-90-7	Chlorobenzene (synonym = monochlorobenzene)	624	50.0		G	1/5 YR
124-48-1	Chlorodibromomethane	624	10.0		G	1/5 YR
67-66-3	Chloroform	624	10.0		G	1/5 YR
75-09-2	Dichloromethane (synonym = methylene chloride)	624	20.0		G	1/5 YR
75-27-4	Dichlorobromomethane	624	10.0		G	1/5 YR
107-06-2	1,2-Dichloroethane	624	10.0		G	1/5 YR
75-35-4	1,1-Dichloroethylene	624	10.0		G	1/5 YR
156-60-5	1,2-trans-dichloroethylene	(4)	(5)		G	1/5 YR
78-87-5	1,2-Dichloropropane	(4)	(5)		G	1/5 YR
542-75-6	1,3-Dichloropropane	(4)	(5)		G	1/5 YR
100-41-4	Ethylbenzene	624	10.0		G	1/5 YR
74-83-9	Methyl Bromide	(4)	(5)		G	1/5 YR
79-34-5	1,1,2,2-Tetrachloroethane	(4)	(5)		G	1/5 YR
127-18-4	Tetrachloroethylene	624	10.0		G	1/5 YR
10-88-3	Toluene	624	10.0		G	1/5 YR
79-00-5	1,1,2-Trichloroethane	(4)	(5)		G	1/5 YR
79-01-6	Trichloroethylene	624	10.0		G	1/5 YR
75-01-4	Vinyl Chloride	624	10.0		G	1/5 YR
RADIONUCLIDES						
	Strontium 90 (pCi/L)	(4)	(5)		G or C	1/5 YR
	Tritium (pCi/L)	(4)	(5)		G or C	1/5 YR
	Beta Particle & Photon Activity (mrem/yr)	(4)	(5)		G or C	1/5 YR

CASRN#	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL ⁽¹⁾	REPORTING RESULTS	SAMPLE TYPE ⁽²⁾	SAMPLE FREQUENCY
	Gross Alpha Particle Activity (pCi/L)	(4)	(5)		G or C	1/5 YR
ACID EXTRACTABLES ⁽⁶⁾						
95-57-8	2-Chlorophenol	625	10.0		G or SC	1/5 YR
120-83-2	2,4 Dichlorophenol	625	10.0		G or SC	1/5 YR
105-67-9	2,4 Dimethylphenol	625	10.0		G or SC	1/5 YR
51-28-5	2,4-Dinitrophenol	(4)	(5)		G or SC	1/5 YR
534-52-1	2-Methyl-4,6-Dinitrophenol	(4)	(5)		G or SC	1/5 YR
87-86-5	Pentachlorophenol	625	50.0		G or SC	1/5 YR
108-95-2	Phenol	625	10.0		G or SC	1/5 YR
88-06-2	2,4,6-Trichlorophenol	625	10.0		G or SC	1/5 YR
MISCELLANEOUS						
	Ammonia as NH ₃ -N, mg/l	350.1	200		C	1/5 YR
	Hardness, mg/l				C	1/5 YR
7782-50-5	Chlorine Produced Oxidant	(4)	(5)		G	1/5 YR
57-12-5	Cyanide, Total	(4)	10.0		G	1/5 YR
N/A	<i>Enterococci</i> (N/CML)	(4)	(5)		G	1/5 YR
7783-06-4	Hydrogen Sulfide	(4)	(5)		G or SC	1/5 YR
60-10-5	Tributyltin ⁽⁷⁾	NBSR 85-3295	(5)		G or C	1/5 YR

Name of Principal Exec. Officer or Authorized Agent/Title

Signature of Principal Officer or Authorized Agent/Date

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations. See 18 U.S.C. Sec. 1001 and 33 U.S.C. Sec. 1319. (Penalties under these statutes may include fines up to \$10,000 and or maximum imprisonment of between 6 months and 5 years.)

FOOTNOTES:

- (1) Quantification level (QL) is defined as the lowest concentration used for the calibration of a measurement system when the calibration is in accordance with the procedures published for the required method.

The quantification levels indicated for the metals are actually Specific Target Values developed for this permit. The Specific Target Value is the approximate value that may initiate a wasteload allocation analysis. Target values are not wasteload allocations or effluent limitations. The Specific Target Values are subject to change based on additional information such as hardness data, receiving stream flow, and design flows.

Units for the quantification level are micrograms/liter unless otherwise specified.

Quality control and quality assurance information shall be submitted to document that the required quantification level has been attained.

(2) Sample Type

G = Grab = An individual sample collected in less than 15 minutes. Substances specified with "grab" sample type shall only be collected as grabs. The permittee may analyze multiple grabs and report the average results provided that the individual grab results are also reported. For grab metals samples, the individual samples shall be filtered and preserved immediately upon collection.

C = Composite = A 24-hour composite unless otherwise specified. The composite shall be a combination of individual samples, taken proportional to flow, obtained at hourly or smaller time intervals. The individual samples may be of equal volume for flows that do not vary by +/- 10 percent over a 24-hour period.

SC = Special Composite = samples for base/neutral/acid compounds, PCBs, and pesticides must be collected as 4 individual grab samples taken proportional to flow at 6-hour intervals over the course of one day. The individual samples may be of equal volume for flows that do not vary by +/- 10 percent over a 24-hour period. Grab samples must be analyzed separately and the concentrations averaged. Alternately, grab samples may be collected in the field and composited in the laboratory if the compositing procedure produces results equivalent to results produced by arithmetic averaging of the results of analysis of individual grab samples.

- (3) A specific analytical method is not specified; however a target value for each metal has been established. An appropriate method to meet the target value shall be selected from the following list of EPA methods (or any approved method presented in 40 CFR Part 136). If the test result is less than the method QL, a "<[QL]" shall be reported where the actual analytical test QL is substituted for [QL].

<u>Metal</u>	<u>Analytical Method</u>
Antimony	1638; 1639
Arsenic	206.5; 1632
Chromium ⁽⁹⁾	1639
Cadmium	1637; 1638; 1639; 1640
Chromium VI	218.6; 1639
Copper	1638; 1640
Lead	1637; 1638; 1640
Mercury	245.7; 1631
Nickel	1638; 1639; 1640
Selenium	1638; 1639
Silver	1638
Zinc	1638; 1639

- (4) Any approved method presented in 40 CFR Part 136.
- (5) The QL is at the discretion of the permittee. For any substances addressed in 40 CFR Part 136, the permittee shall use one of the approved methods in 40 CFR Part 136.
- (6) Testing for phenol requires continuous extraction.
- (7) Analytical Methods: NBSR 85-3295 or DEQ's approved analysis for Tributyltin may also be used [See A Manual for the Analysis of Butyltins in Environmental Systems by the Virginia Institute of Marine Science, dated November 1996].

- (8) Both Chromium III and Chromium VI may be measured by the total chromium analysis. If the result of the total chromium analysis is less than or equal to the lesser of the Chromium III or Chromium VI method QL, the results for both Chromium III and Chromium VI can be reported as "<[QL]", where the actual analytical test QL is substituted for [QL].
- (9) The lab may use SW846 Method 8270D provided the lab has an Initial Demonstration of Capability, has passed a PT for Kepone, and meets the acceptance criteria for Kepone as given in Method 8270D

Mosca,Denise

From: Winter,Kyle
Sent: Friday, December 19, 2008 9:15 AM
To: Bishop,Patrick; Mosca,Denise
Subject: Spill reported by Omega

Kyle Ivar Winter, P.E.
Deputy Regional Director, PRO
4949-A Cox Road
Glen Allen, VA 23060
(804) 527-5052
kiwinter@deq.virginia.gov

From: Bill Purcell [<mailto:bpurcell@OmegaProteinInc.com>]
Sent: Thursday, December 18, 2008 5:15 PM
To: Winter,Kyle
Cc: Jane Crowther; Bob LaBruzzo; Ted Schultz; Andy Hall; Ronnie Bray; Bill Purcell
Subject: Spill

A spill of soapstock from our oil refinery as discovered this morning. The spill resulted from a pump that leaked the evening of December 17 2008 and drained to the wet ditch that drains to the salt pond behind our aerated lagoons. When discovered the ditch was blocked and we have been pumping the spilled material back into the refinery. An estimated 50 gallons of soapstock was spilled with 550 gallons of water. The pH of the discharge was 6.6-6.5 SU. An estimated 5 gallons of the mixture was discharged to the salt pond with no apparent impacts. I will follow this email up with a 5 day letter.

Thanks Bill

William E. Purcell
Environmental Director
Omega Protein, Inc.
P.O. Box 175
610 Menhaden Road
Reedville, Virginia 22539
bpurcell@omegaproteininc.com
Phone (804) 453-4211
Cell (804) 387-2784
Fax (804) 453-4123

7/14/2009

Mosca, Denise

From: Bill Purcell [bpurcell@OmegaProteinInc.com]
Sent: Thursday, February 26, 2009 2:19 PM
To: Bishop, Patrick
Cc: Mosca, Denise; Dare, Michael; Winter, Kyle
Subject: RE: Omega Protein, VPDES VA0003867
Attachments: VPDES-progress.pdf

Just talked to Kyle yesterday about what we are doing. Attached is the formal letter documenting what we are doing. Thanks for the reminder

William E. Purcell
Environmental Director
Omega Protein, Inc.
P.O. Box 175
610 Menhaden Road
Reedville, Virginia 22539
bpurcell@omegaproteininc.com
Phone (804) 453-4211
Cell (804) 387-2784
Fax (804) 453-4123

From: Bishop, Patrick [mailto:plbishop@deq.virginia.gov]
Sent: Thursday, February 26, 2009 11:32 AM
To: Bill Purcell
Cc: Mosca, Denise; Dare, Michael
Subject: Omega Protein, VPDES VA0003867

Bill,

The all-knowing CEDS is telling me that we were due an annual progress report (by 10 JAN. '09) as per Part I. B.16 of your VPDES permit. Was this requirement submitted via the e-DMR application?

Patrick L. Bishop
Virginia Department of Environmental Quality
Piedmont Regional Office
4949-A Cox Road
Glen Allen, VA 23060
Direct - (804) 527-5127
Fax - (804) 527-5106
plbishop@deq.virginia.gov

Always remember that you're unique. Just like everyone else. - Zen proverb



February 26, 2009

Ms. Denise Mosca, Environmental Engineer Senior
Virginia Dept of Environmental Quality
Piedmont Regional Office
4949-A Cox Road
Glen Allen, VA 23060

Re: Phosphorus Progress Report

Denise

Dear Ms Mosca:

We are in the process of installing the DAF and UV disinfection unit to treat the discharge from 002. The units have been ordered and the pad where they will be installed is under construction.

Sincerely,

Bill

William E. Purcell
Director of Environmental Affairs
Omega Protein, Inc.

pc: Joe Kadi, Omega Protein
Bob LaBruzzo, Omega Protein
Bill Black, EnPro
Kyle Winter, Deputy Regional Director PRO
Ted Schultz, Omega Protein

OMEGA PROTEIN REEDVILLE DAILY FISH CATCH REPORT

Monday, November 2, 2009
Week # 25

<u>Vessel</u>	<u>Captain</u>
Earl J. Conrad	P Somers
John Dempster	L Robbins
Kimberly	A Dudley
Lancaster	T Moore
Reedville	T Crandall
Shearwater	R Smith
Smith Island	Bob Huff
Smuggler's Point	A Hinson
Tangler Island	J Crandall
Tideland	J Haydon

<u>Dock Status</u>	<u>Today's Hail</u>	<u>Unloaded @ This Plant</u>		
		<u>Today</u>	<u>WTD</u>	<u>STD</u>
	0	0	0	36,817
	0	0	0	46,941
	0	0	0	38,107
	0	0	0	44,849
	0	0	0	41,960
	0	0	0	38,477
	0	0	0	40,053
	0	0	0	52,199
	0	0	0	45,901
	0	0	0	49,658
	0	0	0	434,962

<u>Plant</u>	<u>Unloaded Elsewhere</u>			<u>Total Unloaded STD</u>
	<u>Today</u>	<u>WTD</u>	<u>STD</u>	
0	0	0	0	36,817
0	0	0	0	46,941
0	0	0	0	38,107
0	0	0	0	44,849
0	0	0	0	41,960
0	0	0	0	38,477
0	0	0	0	40,053
0	0	0	0	52,199
0	0	0	0	45,901
0	0	0	0	49,658
0	0	0	0	434,962

VESSEL TOTALS

Guest Vessels
Fish Purchased

PLANT TOTALS

<u>Vessels</u>	
In	0
Out	10

<u>Aircraft</u>	
In	0
Out	8

Weather
Seas Sunny, NW 6-9 KT
1 FT

REEDVILLE FISH CATCH SUMMARY

<u>Hail</u>	<u>Daily</u>	
	<u>Unloaded</u>	<u>Total</u>
0	0	0

<u>Week to Date</u>		
<u>Unloaded</u>	<u>Total</u>	<u>Plan</u>
0	0	16,000

<u>Season to Date</u>			
<u>Unloaded</u>	<u>Total</u>	<u>Plan</u>	<u>% Plan</u>
434,962	434,962	459,000	95%

MCD

OMEGA PROTEIN REEDVILLE DAILY FISH CATCH REPORT

Tuesday, November 3, 2009
Week # 25

Vessel	Captain	Dock Status	Today's Hail	Unloaded @ This Plant			Unloaded Elsewhere				Total Unloaded STD
				Today	WTD	STD	Plant	Today	WTD	STD	
Earl J. Conrad	P Somers	Weather	20	0	0	36,817					
John Dempster	L Robbins	Weather	0	0	0	46,941	0	0	0	0	36,817
Kimberly	A Dudley	Weather	30	0	0	38,107	0	0	0	0	46,941
Lancaster	T Moore	Weather	0	0	0	44,849	0	0	0	0	38,107
Reedville	T Crandall	Weather	0	0	0	41,960	0	0	0	0	44,849
Shearwater	R Smith	Weather	0	0	0	38,477	0	0	0	0	41,960
Smith Island	Bob Huff	Weather	0	0	0	40,053	0	0	0	0	38,477
Smuggler's Point	A Hinson	Weather	200	0	0	52,199	0	0	0	0	40,053
Tangier Island	J Crandall	Weather	30	0	0	45,901	0	0	0	0	52,199
Tideland	J Haydon	Weather	25	0	0	49,658	0	0	0	0	45,901
VESSEL TOTALS			305	0	0	434,962	0	0	0	0	49,658
											434,962

Guest Vessels
Fish Purchased

PLANT TOTALS

0	0	0	0
0	0	0	20,522
305	0	0	455,484

Vessels	
In	10
Out	0

Aircraft	
In	8
Out	0

will scout by noon

Weather Seas
GALE WATCH
Sunny, NNE 12-15 KT
7 FT

REEDVILLE FISH CATCH SUMMARY

Daily		
Hail	Unloaded	Total
305	0	305

Week to Date		
Unloaded	Total	Plan
0	305	16,000

Season to Date			% Plan
Unloaded	Total	Plan	
434,962	435,267	459,000	95%

med

OMEGA PROTEIN REEDVILLE DAILY FISH CATCH REPORT

Wednesday, November 4, 2009
Week # 25

Vessel	Captain	Dock Status	Today's Hall	Unloaded @ This Plant			Unloaded Elsewhere				Total Unloaded STD
				Today	WTD	STD	Plant	Today	WTD	STD	
Earl J. Conrad	P Somers		20	0	0	36,817					
John Dempster	L Robbins		0	0	0	46,941	0	0	0	0	36,817
Kimberly	A Dudley		30	0	0	38,107	0	0	0	0	46,941
Lancaster	T Moore		0	0	0	44,849	0	0	0	0	38,107
Reedville	T Crandall		0	0	0	41,960	0	0	0	0	44,849
Shearwater	R Smith		0	0	0	38,477	0	0	0	0	41,960
Smith Island	Bob Huff		0	0	0	40,053	0	0	0	0	38,477
Smuggler's Point	A Hinson		200	0	0	52,199	0	0	0	0	40,053
Tangler Island	J Crandall		30	0	0	45,901	0	0	0	0	52,199
Tideland	J Haydon		25	0	0	49,658	0	0	0	0	45,901
							0	0	0	0	49,658
VESSEL TOTALS			305	0	0	434,962	0	0	0	0	434,962
Guest Vessels			0	0	0	0					
Fish Purchased			0	0	0	20,522					
PLANT TOTALS			305	0	0	455,484					

Vessels	
In	0
Out	10

Aircraft	
In	0
Out	8

GALE WATCH	
Weather	Sunny, NNW 8-11 KT
Seas	3 FT

REEDVILLE FISH CATCH SUMMARY

Daily			Week to Date			Season to Date			% Plan
Hall	Unloaded	Total	Unloaded	Total	Plan	Unloaded	Total	Plan	
305	0	305	0	305	16,000	434,962	435,267	459,000	95%

**OMEGA PROTEIN
REEDVILLE DAILY FISH CATCH REPORT**

Friday, November 6, 2009
Week # 25

<u>Vessel</u>	<u>Captain</u>	<u>Dock Status</u>	<u>Today's Hall</u>	<u>Unloaded @ This Plant</u>			<u>Unloaded Elsewhere</u>				<u>Total Unloaded</u>
				<u>Today</u>	<u>WTD</u>	<u>STD</u>	<u>Plant</u>	<u>Today</u>	<u>WTD</u>	<u>STD</u>	<u>STD</u>
Earl J. Conrad	P Somers		0	0	18	36,835	0	0	0	0	36,835
John Dempster	L Robbins		0	0	2	46,943	0	0	0	0	46,943
Kimberly	A Dudley		0	0	32	38,139	0	0	0	0	38,139
Lancaster	T Moore		0	0	41	44,890	0	0	0	0	44,890
Reedville	T Crandall		0	0	0	41,960	0	0	0	0	41,960
Shearwater	R Smith		0	0	0	38,477	0	0	0	0	38,477
Smith Island	Bob Huff		0	0	0	40,053	0	0	0	0	40,053
Smuggler's Point	A Hinson		0	0	172	52,371	0	0	0	0	52,371
Tangier Island	J Crandall		0	0	24	45,925	0	0	0	0	45,925
Tideland	J Haydon		0	0	15	49,673	0	0	0	0	49,673
VESSEL TOTALS			0	0	304	435,266	0	0	0	0	435,266
Guest Vessels			0	0	0	0					
Fish Purchased			0	0	0	20,522					
PLANT TOTALS			0	0	304	455,788					

Vessels
In 0
Out 10

Aircraft
In 0
Out 8

Weather Sunny, SW 8-11 KT
Seas 2 FT

REEDVILLE FISH CATCH SUMMARY

<u>Daily</u>			<u>Week to Date</u>			<u>Season to Date</u>			<u>%</u>
<u>Hall</u>	<u>Unloaded</u>	<u>Total</u>	<u>Unloaded</u>	<u>Total</u>	<u>Plan</u>	<u>Unloaded</u>	<u>Total</u>	<u>Plan</u>	<u>Plan</u>
0	0	0	304	304	16,000	435,266	435,266	459,000	95%

W CD

**OMEGA PROTEIN
REEDVILLE DAILY FISH CATCH REPORT**

Monday, November 9, 2009
Week # 26

<u>Vessel</u>	<u>Captain</u>	<u>Dock Status</u>	<u>Today's Hail</u>	<u>Unloaded @ This Plant</u>			<u>Unloaded Elsewhere</u>				<u>Total Unloaded</u>
				<u>Today</u>	<u>WTD</u>	<u>STD</u>	<u>Plant</u>	<u>Today</u>	<u>WTD</u>	<u>STD</u>	<u>STD</u>
Earl J. Conrad	P Somers		1,000	0	0	36,835	0	0	0	0	36,835
John Dempster	L Robbins	Unload	1,275	0	0	46,943	0	0	0	0	46,943
Kimberly	A Dudley	Unload	1,400	0	0	38,139	0	0	0	0	38,139
Lancaster	T Moore	Unload	1,400	0	0	44,890	0	0	0	0	44,890
Reedville	T Crandall	Unload	1,250	0	0	41,960	0	0	0	0	41,960
Shearwater	R Smith		1,700	0	0	38,477	0	0	0	0	38,477
Smith Island	Bob Huff		1,000	0	0	40,053	0	0	0	0	40,053
Smuggler's Point	A Hinson		0	1,204	1,204	53,575	0	0	0	0	53,575
Tangler Island	J Crandall	Unload	1,150	0	0	45,925	0	0	0	0	45,925
Tideland	J Haydon		1,800	0	0	49,673	0	0	0	0	49,673
VESSEL TOTALS			11,975	1,204	1,204	436,470	0	0	0	0	436,470

Guest Vessels	0	0	0	0
Fish Purchased	0	422	422	20,944
PLANT TOTALS	11,975	1,626	1,626	457,414

Carter's Creek 112 & Indian Creek 310

<u>Vessels</u>		<u>Aircraft</u>		<u>Weather</u>	<u>Seas</u>
In	5	In	0		
Out	5	Out	8	Cloudy, ESE 9-11 KT	4-5 FT

REEDVILLE FISH CATCH SUMMARY

<u>Daily</u>			<u>Week to Date</u>			<u>Season to Date</u>			<u>%</u>
<u>Hail</u>	<u>Unloaded</u>	<u>Total</u>	<u>Unloaded</u>	<u>Total</u>	<u>Plan</u>	<u>Unloaded</u>	<u>Total</u>	<u>Plan</u>	<u>Plan</u>
11,975	1,204	13,179	1,204	13,179	15,000	436,470	448,445	474,000	95%

MCD

**OMEGA PROTEIN
REEDVILLE DAILY FISH CATCH REPORT**

Tuesday, November 10, 2009
Week # 26

<u>Vessel</u>	<u>Captain</u>	<u>Dock Status</u>	<u>Today's Hail</u>	<u>Unloaded @ This Plant</u>			<u>Unloaded Elsewhere</u>				<u>Total Unloaded</u>
				<u>Today</u>	<u>WTD</u>	<u>STD</u>	<u>Plant</u>	<u>Today</u>	<u>WTD</u>	<u>STD</u>	<u>STD</u>
Earl J. Conrad	P Somers	Unload	1,250	0	0	36,835	0	0	0	0	36,835
John Dempster	L Robbins	Weather	0	1,264	1,264	48,207	0	0	0	0	48,207
Kimberly	A Dudley	Weather	0	1,268	1,268	39,407	0	0	0	0	39,407
Lancaster	T Moore	Unload	1,400	0	0	44,890	0	0	0	0	44,890
Reedville	T Crandall	Weather	0	1,116	1,116	43,076	0	0	0	0	43,076
Shearwater	R Smith	Unload	1,650	0	0	38,477	0	0	0	0	38,477
Smith Island	Bob Huff	Unload	1,300	0	0	40,053	0	0	0	0	40,053
Smuggler's Point	A Hinson	Unload	900	0	1,204	53,575	0	0	0	0	53,575
Tangier Island	J Crandall	Weather	0	1,140	1,140	47,065	0	0	0	0	47,065
Tideland	J Haydon	Unload	2,300	0	0	49,673	0	0	0	0	49,673
VESSEL TOTALS			8,800	4,788	5,992	441,258	0	0	0	0	441,258
Guest Vessels			0	0	0	0					
Fish Purchased			350	0	422	20,944					
PLANT TOTALS			9,150	4,788	6,414	462,202					

<u>Vessels</u>	
In	10
Out	0

<u>Aircraft</u>	
In	8
Out	0

<u>Storm Warnings</u>	
Weather	Rain, NE 27-30 KT
Seas	6-10 FT

REEDVILLE FISH CATCH SUMMARY

<u>Daily</u>			<u>Week to Date</u>			<u>Season to Date</u>			<u>%</u>
<u>Hail</u>	<u>Unloaded</u>	<u>Total</u>	<u>Unloaded</u>	<u>Total</u>	<u>Plan</u>	<u>Unloaded</u>	<u>Total</u>	<u>Plan</u>	<u>Plan</u>
8,800	4,788	13,588	5,992	14,792	15,000	441,258	450,058	474,000	95%

WOD

**OMEGA PROTEIN
REEDVILLE DAILY FISH CATCH REPORT**

Wednesday, November 11, 2009
Week # 26

<u>Vessel</u>	<u>Captain</u>	<u>Dock Status</u>	<u>Today's Hall</u>	<u>Unloaded @ This Plant</u>			<u>Unloaded Elsewhere</u>				<u>Total Unloaded</u>
				<u>Today</u>	<u>WTD</u>	<u>STD</u>	<u>Plant</u>	<u>Today</u>	<u>WTD</u>	<u>STD</u>	<u>STD</u>
Earl J. Conrad	P Somers	Unload	1,250	0	0	36,835	0	0	0	0	36,835
John Dempster	L Robbins	Weather	0	0	1,264	48,207	0	0	0	0	48,207
Kimberly	A Dudley	Weather	0	0	1,268	39,407	0	0	0	0	39,407
Lancaster	T Moore	Weather	0	1,312	1,312	46,202	0	0	0	0	46,202
Reedville	T Crandall	Weather	0	0	1,116	43,076	0	0	0	0	43,076
Shearwater	R Smith	Unload	1,650	0	0	38,477	0	0	0	0	38,477
Smith Island	Bob Huff	Unload	1,300	0	0	40,053	0	0	0	0	40,053
Smuggler's Point	A Hinson	Unload	900	0	1,204	53,575	0	0	0	0	53,575
Tangier Island	J Crandall	Weather	0	0	1,140	47,065	0	0	0	0	47,065
Tideland	J Haydon	Unload	2,300	0	0	49,673	0	0	0	0	49,673
VESEL TOTALS			7,400	1,312	7,304	442,570	0	0	0	0	442,570
Guest Vessels			0	0	0	0					
Fish Purchased			350	0	422	20,944					
PLANT TOTALS			7,750	1,312	7,726	463,514					

<u>Vessels</u>	
In	10
Out	0

<u>Aircraft</u>	
In	8
Out	0

<u>Storm Warnings</u>	
Weather	Rain, NE 33-38 KT
Seas	12-13 FT

REEDVILLE FISH CATCH SUMMARY

<u>Daily</u>			<u>Week to Date</u>			<u>Season to Date</u>			<u>%</u>
<u>Hail</u>	<u>Unloaded</u>	<u>Total</u>	<u>Unloaded</u>	<u>Total</u>	<u>Plan</u>	<u>Unloaded</u>	<u>Total</u>	<u>Plan</u>	<u>Plan</u>
7,400	1,312	8,712	7,304	14,704	15,000	442,570	449,970	474,000	95%

MacD

**OMEGA PROTEIN
REEDVILLE DAILY FISH CATCH REPORT**

Thursday, November 12, 2009
Week # 26

<u>Vessel</u>	<u>Captain</u>	<u>Dock Status</u>	<u>Today's Hall</u>	<u>Unloaded @ This Plant</u>			<u>Unloaded Elsewhere</u>				<u>Total Unloaded</u>
				<u>Today</u>	<u>WTD</u>	<u>STD</u>	<u>Plant</u>	<u>Today</u>	<u>WTD</u>	<u>STD</u>	<u>STD</u>
Earl J. Conrad	P Somers	Unload	1,250	0	0	36,835	0	0	0	0	36,835
John Dempster	L Robbins	Weather	0	0	1,264	48,207	0	0	0	0	48,207
Kimberly	A Dudley	Weather	0	0	1,268	39,407	0	0	0	0	39,407
Lancaster	T Moore	Weather	0	0	1,312	46,202	0	0	0	0	46,202
Reedville	T Crandall	Weather	0	0	1,116	43,076	0	0	0	0	43,076
Shearwater	R Smith	Unload	1,650	0	0	38,477	0	0	0	0	38,477
Smith Island	Bob Huff	Unload	1,300	0	0	40,053	0	0	0	0	40,053
Smuggler's Point	A Hinson	Unload	900	0	1,204	53,575	0	0	0	0	53,575
Tangler Island	J Crandall	Weather	0	0	1,140	47,065	0	0	0	0	47,065
Tideland	J Haydon	Unload	2,300	0	0	49,673	0	0	0	0	49,673
VESSEL TOTALS			7,400	0	7,304	442,570	0	0	0	0	442,570
Guest Vessels			0	0	0	0					
Fish Purchased			350	0	422	20,944					
PLANT TOTALS			7,750	0	7,726	463,514					

<u>Vessels</u>	
In	10
Out	0

<u>Aircraft</u>	
In	8
Out	0

Weather	<u>Rain, NNE 20-23 KT</u>
Seas	<u>16 FT</u>

REEDVILLE FISH CATCH SUMMARY

<u>Daily</u>			<u>Week to Date</u>			<u>Season to Date</u>			<u>%</u>
<u>Hail</u>	<u>Unloaded</u>	<u>Total</u>	<u>Unloaded</u>	<u>Total</u>	<u>Plan</u>	<u>Unloaded</u>	<u>Total</u>	<u>Plan</u>	<u>Plan</u>
7,400	0	7,400	7,304	14,704	15,000	442,570	449,970	474,000	95%

WCD

**OMEGA PROTEIN
REEDVILLE DAILY FISH CATCH REPORT**

Friday, November 13, 2009
Week # 26

<u>Vessel</u>	<u>Captain</u>	<u>Dock Status</u>	<u>Today's Hail</u>	<u>Unloaded @ This Plant</u>			<u>Unloaded Elsewhere</u>				<u>Total Unloaded</u>
				<u>Today</u>	<u>WTD</u>	<u>STD</u>	<u>Plant</u>	<u>Today</u>	<u>WTD</u>	<u>STD</u>	<u>STD</u>
Earl J. Conrad	P Somers		0	1,160	1,160	37,995	0	0	0	0	37,995
John Dempster	L Robbins		0	0	1,264	48,207	0	0	0	0	48,207
Kimberly	A Dudley		0	0	1,268	39,407	0	0	0	0	39,407
Lancaster	T Moore		0	0	1,312	46,202	0	0	0	0	46,202
Reedville	T Crandall		0	0	1,116	43,076	0	0	0	0	43,076
Shearwater	R Smith		0	1,432	1,432	39,909	0	0	0	0	39,909
Smith Island	Bob Huff		0	1,164	1,164	41,217	0	0	0	0	41,217
Smuggler's Point	A Hinson		0	806	2,010	54,381	0	0	0	0	54,381
Tangier Island	J Crandall		0	0	1,140	47,065	0	0	0	0	47,065
Tideland	J Haydon		0	2,094	2,094	51,767	0	0	0	0	51,767
VESSEL TOTALS			0	6,656	13,960	449,226	0	0	0	0	449,226
Guest Vessels			0	0	0	0					
Fish Purchased			0	224	646	21,168	Indian Creek				
PLANT TOTALS			0	6,880	14,606	470,394					

<u>Vessels</u>		<u>Aircraft</u>		<u>Weather</u>	<u>Small Craft Advisory</u>	
<u>In</u>	0	<u>In</u>	0		<u>Sunny, N12-16</u>	
<u>Out</u>	10	<u>Out</u>	8	<u>Seas</u>	<u>2 FT</u>	

REEDVILLE FISH CATCH SUMMARY

<u>Daily</u>			<u>Week to Date</u>			<u>Season to Date</u>			<u>% Plan</u>
<u>Hail</u>	<u>Unloaded</u>	<u>Total</u>	<u>Unloaded</u>	<u>Total</u>	<u>Plan</u>	<u>Unloaded</u>	<u>Total</u>	<u>Plan</u>	
0	6,656	6,656	13,960	13,960	15,000	449,226	449,226	474,000	95%

Mad

**OMEGA PROTEIN
REEDVILLE DAILY FISH CATCH REPORT**

Monday, November 16, 2009
Week # 27

<u>Vessel</u>	<u>Captain</u>	<u>Dock Status</u>	<u>Today's Hail</u>	<u>Unloaded @ This Plant</u>			<u>Unloaded Elsewhere</u>				<u>Total Unloaded</u>
				<u>Today</u>	<u>WTD</u>	<u>STD</u>	<u>Plant</u>	<u>Today</u>	<u>WTD</u>	<u>STD</u>	<u>STD</u>
Earl J. Conrad	P Somers		0	0	0	37,995	0	0	0	0	37,995
John Dempster	L Robbins		0	0	0	48,207	0	0	0	0	48,207
Kimberly	A Dudley		28	0	0	39,407	0	0	0	0	39,407
Lancaster	T Moore		40	0	0	46,202	0	0	0	0	46,202
Reedville	T Crandall		0	0	0	43,076	0	0	0	0	43,076
Shearwater	R Smith		0	0	0	39,909	0	0	0	0	39,909
Smith Island	Bob Huff		0	0	0	41,217	0	0	0	0	41,217
Smuggler's Point	A Hinson		20	0	0	54,381	0	0	0	0	54,381
Tangler Island	J Crandall		0	0	0	47,065	0	0	0	0	47,065
Tideland	J Haydon		0	0	0	51,767	0	0	0	0	51,767
VESSEL TOTALS			88	0	0	449,226	0	0	0	0	449,226
Guest Vessels			0	0	0	0					
Fish Purchased			0	0	0	21,168					
PLANT TOTALS			88	0	0	470,394					

Vessels
In 0
Out 10

Aircraft
In 0
Out 8

Small Craft Advisory
Weather Sunny, NNE 16-18
Seas 4-5 FT

REEDVILLE FISH CATCH SUMMARY

<u>Daily</u>			<u>Week to Date</u>			<u>Season to Date</u>			<u>% Plan</u>
<u>Hail</u>	<u>Unloaded</u>	<u>Total</u>	<u>Unloaded</u>	<u>Total</u>	<u>Plan</u>	<u>Unloaded</u>	<u>Total</u>	<u>Plan</u>	
88	0	88	0	88	12,000	449,226	449,314	486,000	92%

**OMEGA PROTEIN
REEDVILLE DAILY FISH CATCH REPORT**

Tuesday, November 17, 2009
Week # 27

<u>Vessel</u>	<u>Captain</u>	<u>Dock Status</u>	<u>Today's Hail</u>	<u>Unloaded @ This Plant</u>			<u>Unloaded Elsewhere</u>				<u>Total Unloaded</u>
				<u>Today</u>	<u>WTD</u>	<u>STD</u>	<u>Plant</u>	<u>Today</u>	<u>WTD</u>	<u>STD</u>	<u>STD</u>
Earl J. Conrad	P Somers	Weather	0	0	0	37,995	0	0	0	0	37,995
John Dempster	L Robbins	Weather	0	0	0	48,207	0	0	0	0	48,207
Kimberly	A Dudley	Weather	28	0	0	39,407	0	0	0	0	39,407
Lancaster	T Moore	Weather	40	0	0	46,202	0	0	0	0	46,202
Reedville	T Crandall	Weather	0	0	0	43,076	0	0	0	0	43,076
Shearwater	R Smith	Weather	0	0	0	39,909	0	0	0	0	39,909
Smith Island	Bob Huff	Weather	0	0	0	41,217	0	0	0	0	41,217
Smuggler's Point	A Hinson	Weather	20	0	0	54,381	0	0	0	0	54,381
Tangier Island	J Crandall	Weather	0	0	0	47,065	0	0	0	0	47,065
Tideland	J Haydon	Weather	0	0	0	51,767	0	0	0	0	51,767
VESSEL TOTALS			88	0	0	449,226	0	0	0	0	449,226
Guest Vessels			0	0	0	0					
Fish Purchased			0	0	0	21,168					
PLANT TOTALS			88	0	0	470,394					

<u>Vessels</u>	
In	10
Out	0

<u>Aircraft</u>	
In	8
Out	0

Weather Seas	Small Craft Advisory
	Cloudy, ENE 19-22 6 FT

REEDVILLE FISH CATCH SUMMARY

<u>Daily</u>			<u>Week to Date</u>			<u>Season to Date</u>			<u>%</u>
<u>Hail</u>	<u>Unloaded</u>	<u>Total</u>	<u>Unloaded</u>	<u>Total</u>	<u>Plan</u>	<u>Unloaded</u>	<u>Total</u>	<u>Plan</u>	<u>Plan</u>
88	0	88	0	88	12,000	449,226	449,314	486,000	92%

M/D

**OMEGA PROTEIN
REEDVILLE DAILY FISH CATCH REPORT**

Wednesday, November 18, 2009
Week # 27

<u>Vessel</u>	<u>Captain</u>	<u>Dock Status</u>	<u>Today's Hail</u>	<u>Unloaded @ This Plant</u>			<u>Unloaded Elsewhere</u>				<u>Total Unloaded</u>
				<u>Today</u>	<u>WTD</u>	<u>STD</u>	<u>Plant</u>	<u>Today</u>	<u>WTD</u>	<u>STD</u>	<u>STD</u>
Earl J. Conrad	P Somers	Weather	0	0	0	37,995	0	0	0	0	37,995
John Dempster	L Robbins	Weather	0	0	0	48,207	0	0	0	0	48,207
Kimberly	A Dudley	Weather	28	0	0	39,407	0	0	0	0	39,407
Lancaster	T Moore	Weather	40	0	0	46,202	0	0	0	0	46,202
Reedville	T Crandall	Weather	0	0	0	43,076	0	0	0	0	43,076
Shearwater	R Smith	Weather	0	0	0	39,909	0	0	0	0	39,909
Smith Island	Bob Huff	Weather	0	0	0	41,217	0	0	0	0	41,217
Smuggler's Point	A Hinson	Weather	20	0	0	54,381	0	0	0	0	54,381
Tangier Island	J Crandall	Weather	0	0	0	47,065	0	0	0	0	47,065
Tideland	J Haydon	Weather	0	0	0	51,767	0	0	0	0	51,767
VESEL TOTALS			88	0	0	449,226	0	0	0	0	449,226
Guest Vessels			0	0	0	0					
Fish Purchased			0	0	0	21,168					
PLANT TOTALS			88	0	0	470,394					

Vessels
In 10
Out 0

Aircraft
In 0
Out 8

Weather
Seas
FOG
Small Craft Advisory
Cloudy, Fog, SE 9-14
4 FT

REEDVILLE FISH CATCH SUMMARY

<u>Daily</u>			<u>Week to Date</u>			<u>Season to Date</u>			<u>%</u>
<u>Hail</u>	<u>Unloaded</u>	<u>Total</u>	<u>Unloaded</u>	<u>Total</u>	<u>Plan</u>	<u>Unloaded</u>	<u>Total</u>	<u>Plan</u>	<u>Plan</u>
88	0	88	0	88	12,000	449,226	449,314	486,000	92%

MCD

**OMEGA PROTEIN
REEDVILLE DAILY FISH CATCH REPORT**

Thursday, November 19, 2009
Week # 27

<u>Vessel</u>	<u>Captain</u>	<u>Dock Status</u>	<u>Today's Hail</u>	<u>Unloaded @ This Plant</u>			<u>Unloaded Elsewhere</u>				<u>Total Unloaded</u>
				<u>Today</u>	<u>WTD</u>	<u>STD</u>	<u>Plant</u>	<u>Today</u>	<u>WTD</u>	<u>STD</u>	<u>STD</u>
Earl J. Conrad	P Somers	Weather	0	0	0	37,995	0	0	0	0	37,995
John Dempster	L Robbins	Weather	0	0	0	48,207	0	0	0	0	48,207
Kimberly	A Dudley	Weather	28	0	0	39,407	0	0	0	0	39,407
Lancaster	T Moore	Weather	40	0	0	46,202	0	0	0	0	46,202
Reedville	T Crandall	Weather	0	0	0	43,076	0	0	0	0	43,076
Shearwater	R Smith	Weather	0	0	0	39,909	0	0	0	0	39,909
Smith Island	Bob Huff	Weather	0	0	0	41,217	0	0	0	0	41,217
Smuggler's Point	A Hinson	Weather	20	0	0	54,381	0	0	0	0	54,381
Tangier Island	J Crandall	Weather	0	0	0	47,065	0	0	0	0	47,065
Tideland	J Haydon	Weather	0	0	0	51,767	0	0	0	0	51,767
VESSEL TOTALS			88	0	0	449,226	0	0	0	0	449,226
Guest Vessels			0	0	0	0					
Fish Purchased			0	0	0	21,168					
PLANT TOTALS			88	0	0	470,394					

Vessels
In 10
Out 0

Aircraft
In 8
Out 0

Small Craft Advisory
Weather Sunny, N 15-19
Seas 3-4 FT

REEDVILLE FISH CATCH SUMMARY

<u>Daily</u>			<u>Week to Date</u>			<u>Season to Date</u>			<u>%</u>
<u>Hail</u>	<u>Unloaded</u>	<u>Total</u>	<u>Unloaded</u>	<u>Total</u>	<u>Plan</u>	<u>Unloaded</u>	<u>Total</u>	<u>Plan</u>	<u>Plan</u>
88	0	88	0	88	12,000	449,226	449,314	486,000	92%

MCD

**OMEGA PROTEIN
REEDVILLE DAILY FISH CATCH REPORT**

Friday, November 20, 2009
Week # 27

<u>Vessel</u>	<u>Captain</u>	<u>Dock Status</u>	<u>Today's Hail</u>	<u>Unloaded @ This Plant</u>			<u>Unloaded Elsewhere</u>				<u>Total Unloaded</u>
				<u>Today</u>	<u>WTD</u>	<u>STD</u>	<u>Plant</u>	<u>Today</u>	<u>WTD</u>	<u>STD</u>	<u>STD</u>
Earl J. Conrad	P Somers	Weather	0	0	0	37,995	0	0	0	0	37,995
John Dempster	L Robbins	Weather	0	0	0	48,207	0	0	0	0	48,207
Kimberly	A Dudley	Weather	0	22	22	39,429	0	0	0	0	39,429
Lancaster	T Moore	Weather	0	20	20	46,222	0	0	0	0	46,222
Reedville	T Crandall	Weather	0	0	0	43,076	0	0	0	0	43,076
Shearwater	R Smith	Weather	0	0	0	39,909	0	0	0	0	39,909
Smith Island	Bob Huff	Weather	0	0	0	41,217	0	0	0	0	41,217
Smuggler's Point	A Hinson	Weather	0	8	8	54,389	0	0	0	0	54,389
Tangler Island	J Crandall	Weather	0	0	0	47,065	0	0	0	0	47,065
Tideland	J Haydon	Weather	0	0	0	51,767	0	0	0	0	51,767
VESEL TOTALS			0	50	50	449,276	0	0	0	0	449,276
Guest Vessels			0	0	0	0					
Fish Purchased			0	0	0	21,168					
PLANT TOTALS			0	50	50	470,444					

Vessels
In 10
Out 0

Aircraft
In 8
Out 0

Weather Seas
Small Craft Advisory
Rain, NNE 18 KT
4 FT

REEDVILLE FISH CATCH SUMMARY

<u>Daily</u>			<u>Week to Date</u>			<u>Season to Date</u>			<u>%</u>
<u>Hail</u>	<u>Unloaded</u>	<u>Total</u>	<u>Unloaded</u>	<u>Total</u>	<u>Plan</u>	<u>Unloaded</u>	<u>Total</u>	<u>Plan</u>	<u>Plan</u>
0	50	50	50	50	12,000	449,276	449,276	486,000	92%

MCD

**OMEGA PROTEIN
REEDVILLE DAILY FISH CATCH REPORT**

Monday, November 23, 2009
Week # 28

<u>Vessel</u>	<u>Captain</u>	<u>Dock Status</u>	<u>Today's Hail</u>	<u>Unloaded @ This Plant</u>			<u>Unloaded Elsewhere</u>				<u>Total Unloaded</u>
				<u>Today</u>	<u>WTD</u>	<u>STD</u>	<u>Plant</u>	<u>Today</u>	<u>WTD</u>	<u>STD</u>	<u>STD</u>
Earl J. Conrad	P Somers	Weather	0	0	0	37,995	0	0	0	0	37,995
John Dempster	L Robbins	Weather	0	0	0	48,207	0	0	0	0	48,207
Kimberly	A Dudley	Weather	0	0	0	39,429	0	0	0	0	39,429
Lancaster	T Moore	Weather	0	0	0	46,222	0	0	0	0	46,222
Reedville	T Crandall	Weather	0	0	0	43,076	0	0	0	0	43,076
Shearwater	R Smith	Weather	0	0	0	39,909	0	0	0	0	39,909
Smith Island	Bob Huff	Weather	0	0	0	41,217	0	0	0	0	41,217
Smuggler's Point	A Hinson	Weather	0	0	0	54,389	0	0	0	0	54,389
Tangier Island	J Crandall	Weather	0	0	0	47,065	0	0	0	0	47,065
Tideland	J Haydon	Weather	0	0	0	51,767	0	0	0	0	51,767
VESSEL TOTALS			0	0	0	449,276	0	0	0	0	449,276
Guest Vessels			0	0	0	0					
Fish Purchased			0	0	0	21,168					
PLANT TOTALS			0	0	0	470,444					

Vessels
In 10
Out 0

Aircraft
In 8
Out 0

Weather FOG
Seas Small Craft Advisory
Rain, N 18 KT
4 FT

REEDVILLE FISH CATCH SUMMARY

<u>Daily</u>			<u>Week to Date</u>			<u>Season to Date</u>			<u>%</u>
<u>Hail</u>	<u>Unloaded</u>	<u>Total</u>	<u>Unloaded</u>	<u>Total</u>	<u>Plan</u>	<u>Unloaded</u>	<u>Total</u>	<u>Plan</u>	
0	0	0	0	0	10,000	449,276	449,276	496,000	91%

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**OMEGA PROTEIN
REEDVILLE DAILY FISH CATCH REPORT**

Tuesday, November 24, 2009
Week # 28

<u>Vessel</u>	<u>Captain</u>	<u>Dock Status</u>	<u>Today's Hail</u>	<u>Unloaded @ This Plant</u>			<u>Unloaded Elsewhere</u>				<u>Total Unloaded</u>
				<u>Today</u>	<u>WTD</u>	<u>STD</u>	<u>Plant</u>	<u>Today</u>	<u>WTD</u>	<u>STD</u>	<u>STD</u>
Earl J. Conrad	P Somers	Weather	0	0	0	37,995	0	0	0	0	37,995
John Dempster	L Robbins	Weather	0	0	0	48,207	0	0	0	0	48,207
Kimberly	A Dudley	Weather	0	0	0	39,429	0	0	0	0	39,429
Lancaster	T Moore	Weather	0	0	0	46,222	0	0	0	0	46,222
Reedville	T Crandall	Weather	0	0	0	43,076	0	0	0	0	43,076
Shearwater	R Smith	Weather	0	0	0	39,909	0	0	0	0	39,909
Smith Island	Bob Huff	Weather	0	0	0	41,217	0	0	0	0	41,217
Smuggler's Point	A Hinson	Weather	0	0	0	54,389	0	0	0	0	54,389
Tangler Island	J Crandall	Weather	0	0	0	47,065	0	0	0	0	47,065
Tideland	J Haydon	Weather	0	0	0	51,767	0	0	0	0	51,767
VESSEL TOTALS			0	0	0	449,276	0	0	0	0	449,276
Guest Vessels			0	0	0	0					
Fish Purchased			0	0	0	21,168					
PLANT TOTALS			0	0	0	470,444					

Vessels
In 10
Out 0

Aircraft
In 8
Out 0

Weather FOG
Seas Small Craft Advisory
Rain, N 18 KT
4 FT

REEDVILLE FISH CATCH SUMMARY

<u>Daily</u>			<u>Week to Date</u>			<u>Season to Date</u>			<u>%</u>
<u>Hail</u>	<u>Unloaded</u>	<u>Total</u>	<u>Unloaded</u>	<u>Total</u>	<u>Plan</u>	<u>Unloaded</u>	<u>Total</u>	<u>Plan</u>	<u>Plan</u>
0	0	0	0	0	10,000	449,276	449,276	496,000	91%

**OMEGA PROTEIN
REEDVILLE DAILY FISH CATCH REPORT**

Wednesday, November 25, 2009
Week # 28

<u>Vessel</u>	<u>Captain</u>	<u>Dock Status</u>	<u>Today's Hail</u>	<u>Unloaded @ This Plant</u>			<u>Unloaded Elsewhere</u>				<u>Total Unloaded</u>
				<u>Today</u>	<u>WTD</u>	<u>STD</u>	<u>Plant</u>	<u>Today</u>	<u>WTD</u>	<u>STD</u>	<u>STD</u>
Earl J. Conrad	P Somers	HOLIDAY	0	0	0	37,995	0	0	0	0	37,995
John Dempster	L Robbins	HOLIDAY	0	0	0	48,207	0	0	0	0	48,207
Kimberly	A Dudley	HOLIDAY	0	0	0	39,429	0	0	0	0	39,429
Lancaster	T Moore	HOLIDAY	0	0	0	46,222	0	0	0	0	46,222
Reedville	T Crandall	HOLIDAY	0	0	0	43,076	0	0	0	0	43,076
Shearwater	R Smith	HOLIDAY	0	0	0	39,909	0	0	0	0	39,909
Smith Island	Bob Huff	HOLIDAY	0	0	0	41,217	0	0	0	0	41,217
Smuggler's Point	A Hinson	HOLIDAY	0	0	0	54,389	0	0	0	0	54,389
Tangler Island	J Crandall	HOLIDAY	0	0	0	47,065	0	0	0	0	47,065
Tideland	J Haydon	HOLIDAY	0	0	0	51,767	0	0	0	0	51,767
VESEL TOTALS			0	0	0	449,276	0	0	0	0	449,276
Guest Vessels			0	0	0	0					
Fish Purchased			0	0	0	21,168					
PLANT TOTALS			0	0	0	470,444					

Vessels
In 10
Out 0

Aircraft
In 8
Out 0

Weather FOG
Seas Small Craft Advisory
Rain, N 18 KT
4 FT

REEDVILLE FISH CATCH SUMMARY

<u>Daily</u>			<u>Week to Date</u>			<u>Season to Date</u>			<u>%</u>
<u>Hail</u>	<u>Unloaded</u>	<u>Total</u>	<u>Unloaded</u>	<u>Total</u>	<u>Plan</u>	<u>Unloaded</u>	<u>Total</u>	<u>Plan</u>	<u>Plan</u>
0	0	0	0	0	10,000	449,276	449,276	496,000	91%

**OMEGA PROTEIN
REEDVILLE DAILY FISH CATCH REPORT**

Thursday, November 26, 2009
Week # 28

<u>Vessel</u>	<u>Captain</u>	<u>Dock Status</u>	<u>Today's Hail</u>	<u>Unloaded @ This Plant</u>			<u>Unloaded Elsewhere</u>				<u>Total Unloaded</u>
				<u>Today</u>	<u>WTD</u>	<u>STD</u>	<u>Plant</u>	<u>Today</u>	<u>WTD</u>	<u>STD</u>	<u>STD</u>
Earl J. Conrad	P Somers	HOLIDAY	0	0	0	37,995	0	0	0	0	37,995
John Dempster	L Robbins	HOLIDAY	0	0	0	48,207	0	0	0	0	48,207
Kimberly	A Dudley	HOLIDAY	0	0	0	39,429	0	0	0	0	39,429
Lancaster	T Moore	HOLIDAY	0	0	0	46,222	0	0	0	0	46,222
Reedville	T Crandall	HOLIDAY	0	0	0	43,076	0	0	0	0	43,076
Shearwater	R Smith	HOLIDAY	0	0	0	39,909	0	0	0	0	39,909
Smith Island	Bob Huff	HOLIDAY	0	0	0	41,217	0	0	0	0	41,217
Smuggler's Point	A Hinson	HOLIDAY	0	0	0	54,389	0	0	0	0	54,389
Tangier Island	J Crandall	HOLIDAY	0	0	0	47,065	0	0	0	0	47,065
Tideland	J Haydon	HOLIDAY	0	0	0	51,767	0	0	0	0	51,767
VESSEL TOTALS			0	0	0	449,276	0	0	0	0	449,276
Guest Vessels			0	0	0	0					
Fish Purchased			0	0	0	21,168					
PLANT TOTALS			0	0	0	470,444					

Vessels
In 10
Out 0

Aircraft
In 8
Out 0

Weather FOG
Seas Small Craft Advisory
Rain, N 18 KT
4 FT

REEDVILLE FISH CATCH SUMMARY

<u>Daily</u>			<u>Week to Date</u>			<u>Season to Date</u>			<u>%</u>
<u>Hail</u>	<u>Unloaded</u>	<u>Total</u>	<u>Unloaded</u>	<u>Total</u>	<u>Plan</u>	<u>Unloaded</u>	<u>Total</u>	<u>Plan</u>	<u>Plan</u>
0	0	0	0	0	10,000	449,276	449,276	496,000	91%

**OMEGA PROTEIN
REEDVILLE DAILY FISH CATCH REPORT**

Friday, November 27, 2009
Week # 28

Vessel	Captain	Dock Status	Today's Hall	Unloaded @ This Plant			Unloaded Elsewhere				Total Unloaded
				Today	WTD	STD	Plant	Today	WTD	STD	STD
Earl J. Conrad	P Somers	CREW	0	0	0	37,995	0	0	0	0	37,995
John Dempster	L Robbins		0	0	0	48,207	0	0	0	0	48,207
Kimberly	A Dudley		0	0	0	39,429	0	0	0	0	39,429
Lancaster	T Moore		0	0	0	46,222	0	0	0	0	46,222
Reedville	T Crandall		0	0	0	43,076	0	0	0	0	43,076
Shearwater	R Smith		0	0	0	39,909	0	0	0	0	39,909
Smith Island	Bob Huff		0	0	0	41,217	0	0	0	0	41,217
Smuggler's Point	A Hinson		0	0	0	54,389	0	0	0	0	54,389
Tangier Island	J Crandall		0	0	0	47,065	0	0	0	0	47,065
Tideland	J Haydon		0	0	0	51,767	0	0	0	0	51,767
VESSEL TOTALS			0	0	0	449,276	0	0	0	0	449,276
Guest Vessels			0	0	0	0					
Fish Purchased			0	0	0	21,168					
PLANT TOTALS			0	0	0	470,444					

Vessels
In 1
Out 9

Aircraft
In 0
Out 8

Small Craft Advisory
Weather Partly Sunny, SE 17-19
Seas 3-4 FT

REEDVILLE FISH CATCH SUMMARY

<u>Daily</u>			<u>Week to Date</u>			<u>Season to Date</u>			<u>%</u>
<u>Hail</u>	<u>Unloaded</u>	<u>Total</u>	<u>Unloaded</u>	<u>Total</u>	<u>Plan</u>	<u>Unloaded</u>	<u>Total</u>	<u>Plan</u>	<u>Plan</u>
0	0	0	0	0	10,000	449,276	449,276	496,000	91%

MCD

**OMEGA PROTEIN
REEDVILLE DAILY FISH CATCH REPORT**

Monday, November 30, 2009
Week # 29

Vessel	Captain	Dock Status	Today's Hall	Unloaded @ This Plant			Unloaded Elsewhere				Total Unloaded
				Today	WTD	STD	Plant	Today	WTD	STD	STD
Earl J. Conrad	P Somers	WEATHER	0	0	0	37,995	0	0	0	0	37,995
John Dempster	L Robbins	WEATHER	0	0	0	48,207	0	0	0	0	48,207
Kimberly	A Dudley	WEATHER	0	0	0	39,429	0	0	0	0	39,429
Lancaster	T Moore	WEATHER	0	0	0	46,222	0	0	0	0	46,222
Reedville	T Crandall	WEATHER	0	0	0	43,076	0	0	0	0	43,076
Shearwater	R Smith	WEATHER	0	0	0	39,909	0	0	0	0	39,909
Smith Island	Bob Huff	WEATHER	0	0	0	41,217	0	0	0	0	41,217
Smuggler's Point	A Hinson	WEATHER	0	0	0	54,389	0	0	0	0	54,389
Tangier Island	J Crandall	WEATHER	0	0	0	47,065	0	0	0	0	47,065
Tideland	J Haydon	WEATHER	0	0	0	51,767	0	0	0	0	51,767
VESSEL TOTALS			0	0	0	449,276	0	0	0	0	449,276
Guest Vessels			0	0	0	0					
Fish Purchased			0	0	0	21,168					
PLANT TOTALS			0	0	0	470,444					

Vessels
In 10
Out 0

Aircraft
In 8
Out 0

Small Craft Advisory
Weather Sunny, NNW 14-17
Seas 5 FT

REEDVILLE FISH CATCH SUMMARY

Daily			Week to Date			Season to Date			%
Hall	Unloaded	Total	Unloaded	Total	Plan	Unloaded	Total	Plan	Plan
0	0	0	0	0	9,000	449,276	449,276	505,000	89%

M. (10)

**OMEGA PROTEIN
REEDVILLE DAILY FISH CATCH REPORT**

Tuesday, December 8, 2009
Week # 30

Vessel	Captain	Dock Status	Today's Hail	Unloaded @ This Plant			Unloaded Elsewhere				Total Unloaded
				Today	WTD	STD	Plant	Today	WTD	STD	STD
Earl J. Conrad	P Somers	Weather	0	200	200	38,195	0	0	0	0	38,195
John Dempster	L Robbins	Weather	0	850	850	49,057	0	0	0	0	49,057
Kimberly	A Dudley	Weather	0	278	278	39,707	0	0	0	0	39,707
Lancaster	T Moore	Weather	0	234	234	46,456	0	0	0	0	46,456
Reedville	T Crandall	Weather	0	0	0	43,076	0	0	0	0	43,076
Shearwater	R Smith	Weather	0	300	300	40,209	0	0	0	0	40,209
Smith Island	Bob Huff	Weather	0	0	0	41,217	0	0	0	0	41,217
Smuggler's Point	A Hinson	Weather	0	396	396	54,785	0	0	0	0	54,785
Tangier Island	J Crandall	Weather	0	328	328	47,393	0	0	0	0	47,393
Tideland	J Haydon	Weather	0	0	0	51,767	0	0	0	0	51,767
VESEL TOTALS			0	2,586	2,586	451,862	0	0	0	0	451,862
Guest Vessels			0	0	0	0					
Fish Purchased			0	0	0	21,168					
PLANT TOTALS			0	2,586	2,586	473,030					

Vessels	
In	10
Out	0

Aircraft	
In	8
Out	0

GALE WARNING	
Weather	RAIN - SW 27-30
Seas	6 FT

REEDVILLE FISH CATCH SUMMARY

Daily			Week to Date			Season to Date			%
Hail	Unloaded	Total	Unloaded	Total	Plan	Unloaded	Total	Plan	Plan
0	2,586	2,586	2,586	2,586	6,000	451,862	451,862	511,000	88%

MO

From: Dare,Michael
Sent: Friday, November 13, 2009 1:18 PM
To: Morris,Stephen; Mosca,Denise; Bishop,Patrick
Subject: FW: Oil Splill 10/27/09

Follow-up to oil spill that occurred at Omega on 10/27/09.

Mike Dare

Water Inspector

Virginia Department of Environmental Quality

Piedmont Regional Office

4949-A Cox Road

Glen Allen, VA 23060

Phone: 804-527-5055

Fax: 804-527-5106

From: Ted Schultz [mailto:tschultz@OmegaProteinInc.com]
Sent: Friday, November 13, 2009 1:13 PM
To: Dare,Michael
Subject: Oil Splill 10/27/09

On 10/27/09 at approximately 6:00 AM the packing from a pump used to fuel our vessels with diesel fuel "let go". Fuel oil sprayed into the air and was pushed toward the west by the prevailing wind. Approximately 50 gallons landed around the vessel in Cockrel Creek. Immediate response was to shut off the pump. A boom was then deployed to surround the spill. The spill was then "mopped" up with absorbent cloth. The incident was reported to the NRC at 7:53 AM 10/27/09.

At approximately 11:00 AM two members of the Coast Guard arrived to review the incident and mitigation. They indicated that we handled the incident properly and that no additional futher action was required.

Theodore (Ted) Schultz

*Technical Supervisor
Omega Protein, Inc
PO Box 175
610 Menhaden Road
Reedville, VA 22539
Land: (804) 453-4211
Cell: 1-804-516-0534*



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

PIEDMONT REGIONAL OFFICE

4949-A Cox Road, Glen Allen, Virginia 23060

(804) 527-5020 Fax (804) 527-5106

www.deq.virginia.gov

L. Preston Bryant, Jr.
Secretary of Natural Resources

David K. Paylor
Director

November 17, 2009

Mr. Robert La Bruzzo,
General Manager
Omega Protein, Inc.
PO Box 175
Reedville, VA 22539

Re: Wastewater Facility and Laboratory Inspections, VPDES Permit No. VA0003867 – Omega Protein, Inc.

Dear Mr. La Bruzzo,

Enclosed are the reports resulting from the subject inspections performed on November 5, 2009. Please review the reports carefully especially the **“General Recommendations”** and **“Compliance Recommendations”** on page 5 of the Facility Inspection Report and the **“Deficiencies”** on page 3 of the Laboratory Inspection Report.

Please provide a written response to the recommendations, citing corrective actions, within 30 days of receipt of this letter.

If you have questions regarding the reports, please contact me at (804) 527-5055.

Sincerely,

A handwritten signature in black ink that reads "Mike Dare".

Mike Dare
Water Inspector

Enclosure

CC: DEQ – File

T. Schultz - Omega

S. Stell

EPA

VIRGINIA DEPARTMENT OF ENVIRONMENTAL QUALITY

Wastewater Facility Inspection Report

Facility Name: <u>Omega Protein, Inc.</u> City/County: <u>Northumberland</u> Inspection Date: <u>November 5, 2009</u> Inspector: <u>Mike Dare MD 11-10-09</u> Reviewed By: <u>MW 11/13/09</u> <u>KW 11/14/09</u> Present at Inspection: <u>Ted Schultz</u>	Facility No.: <u>VA0003867</u> Inspection Agency: <u>DEQ</u> Date Form Completed: <u>November 10, 2009</u> Time Spent: <u>12 hrs. w/ travel & report</u> Unannounced Insp.? <u>Yes</u> FY-Scheduled Insp.? <u>Yes</u>																																				
TYPE OF FACILITY: <div style="display: flex; justify-content: space-between;"> <u>Domestic</u> <u>Industrial</u> </div> <div style="display: flex; justify-content: space-between;"> <div> <input type="checkbox"/> Federal <input type="checkbox"/> Major <input type="checkbox"/> Non-Federal <input type="checkbox"/> Minor </div> <div> <input checked="" type="checkbox"/> Major <input type="checkbox"/> Primary <input type="checkbox"/> Minor <input type="checkbox"/> Secondary </div> </div> Population Served: <u>approx.: (N/A)</u> Number of Connections: <u>approx.: (N/A)</u>																																					
TYPE OF INSPECTION: <input checked="" type="checkbox"/> Routine Date of last inspection: <u>August 5, 2008</u> <input type="checkbox"/> Compliance Agency: <u>DEQ/PRO</u> <input type="checkbox"/> Reinspection																																					
EFFLUENT MONITORING: <i>See Discharge Monitoring Reports (DMR) in file</i> <table style="width:100%;"> <tr> <td style="width:25%;">Last month average:</td> <td style="width:25%;">BOD: ____ mg/L</td> <td style="width:25%;">TSS: ____ mg/L</td> <td style="width:25%;">Flow: ____ MGD</td> </tr> <tr> <td colspan="4">(Influent) Date:</td> </tr> <tr> <td colspan="4">Other:</td> </tr> <tr> <td>Last month:</td> <td>BOD: ____ mg/L</td> <td>TSS: ____ mg/L</td> <td>Flow: ____ MGD</td> </tr> <tr> <td colspan="4">(Effluent) Date:</td> </tr> <tr> <td colspan="4">Other:</td> </tr> <tr> <td>Quarter average:</td> <td>BOD: ____ mg/L</td> <td>TSS: ____ mg/L</td> <td>Flow: ____ MGD</td> </tr> <tr> <td colspan="4">(Effluent) Date:</td> </tr> <tr> <td colspan="4">Other:</td> </tr> </table>		Last month average:	BOD: ____ mg/L	TSS: ____ mg/L	Flow: ____ MGD	(Influent) Date:				Other:				Last month:	BOD: ____ mg/L	TSS: ____ mg/L	Flow: ____ MGD	(Effluent) Date:				Other:				Quarter average:	BOD: ____ mg/L	TSS: ____ mg/L	Flow: ____ MGD	(Effluent) Date:				Other:			
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(Effluent) Date:																																					
Other:																																					
CHANGES AND/OR CONSTRUCTION DATA VERIFIED IN PREFACE <input type="checkbox"/> Updated <input type="checkbox"/> No changes <i>see below</i> Has there been any new construction? <input checked="" type="checkbox"/> Yes* <input type="checkbox"/> No If yes, were plans and specifications approved? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No* <input type="checkbox"/> N/A DEQ approval date: <u>Lagoons discharge to new DAF and UV units.</u>																																					

(A) PLANT OPERATION AND MAINTENANCE

1. Class and number of licensed operators: Class I – 0, Class II – 0, Class III – 1, Class IV – 0, Trainee - 0
2. Hours per day plant is staffed: WWTF: on site 4 hrs; monitored via computer 24/7
3. Describe adequacy of staffing: ☐ Good ☒ Average ☐ Poor*
4. Does the plant have an established program for training personnel? ☒ Yes ☐ No
5. Describe the adequacy of the training program: ☐ Good ☒ Average ☐ Poor*
6. Are preventive maintenance tasks scheduled? ☒ Yes ☐ No*
7. Describe the adequacy of maintenance: ☐ Good ☒ Average ☐ Poor*
8. Does the plant experience any organic/hydraulic overloading? ☐ Yes* ☒ No

If yes, identify cause and impact on plant: N/A
9. Any bypassing since last inspection? ☒ Yes* ☐ No
10. Is the on-site electric generator operational? ☒ Yes ☐ No* ☐ N/A
11. Is the STP alarm system operational? ☐ Yes ☐ No* ☒ N/A
12. How often is the standby generator exercised? ☒ Weekly ☐ Monthly ☐ Other: N/A
Power Transfer Switch? ☒ Weekly ☐ Monthly ☐ Other: N/A
Alarm System? ☐ Weekly ☐ Monthly ☒ Other: N/A
13. When were the cross connection control devices last tested on the potable water service? 2 units last tested 4/09
14. Is sludge disposed in accordance with the approved sludge disposal plan? ☒ Yes ☐ No* ☐ N/A
15. Is septage received by the facility? ☐ Yes ☒ No
Is septage loading controlled? ☐ Yes ☐ No* ☒ N/A
Are records maintained? ☐ Yes ☐ No* ☒ N/A
16. Overall appearance of facility: ☐ Good ☒ Average ☐ Poor*

Comments: #4 Training consists of on-the-job training. #14 – It is noted that the sludge holding lagoon is nearing capacity.

(B) PLANT RECORDS

1. Which of the following records does the plant maintain?
- | | | | |
|--|---|------------------------------|---|
| Operational Logs for each unit process | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* | <input type="checkbox"/> N/A |
| Instrument maintenance and calibration | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* | <input type="checkbox"/> N/A |
| Mechanical equipment maintenance | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* | <input type="checkbox"/> N/A |
| Industrial waste contribution (Municipal Facilities) | <input type="checkbox"/> Yes | <input type="checkbox"/> No* | <input checked="" type="checkbox"/> N/A |
2. What does the operational log contain?
- | | | | |
|----------------------|---|--|---|
| Visual Observations | <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No | <input type="checkbox"/> N/A |
| Flow Measurement | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A |
| Laboratory Results | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | <input type="checkbox"/> N/A |
| Process Adjustments | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* | <input type="checkbox"/> N/A |
| Control Calculations | <input type="checkbox"/> Yes | <input type="checkbox"/> No | <input checked="" type="checkbox"/> N/A |
| Other: | <u>N/A</u> | | |
3. What do the mechanical equipment records contain:
- | | | | |
|-----------------------------|---|------------------------------|------------------------------|
| As built plans and specs? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* | <input type="checkbox"/> N/A |
| Spare parts inventory? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* | <input type="checkbox"/> N/A |
| Manufacturers instructions? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* | <input type="checkbox"/> N/A |
| Equipment/parts suppliers? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* | <input type="checkbox"/> N/A |
| Lubrication schedules? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* | <input type="checkbox"/> N/A |
| Other: | <u>N/A</u> | | |
| Comments: | <u>None</u> | | |
4. What do the industrial waste contribution records contain:
- (Applicable to municipal facilities only)*
- | | | | |
|--------------------------------|------------------------------|------------------------------|---|
| Waste characteristics? | <input type="checkbox"/> Yes | <input type="checkbox"/> No* | <input checked="" type="checkbox"/> N/A |
| Locations and discharge types? | <input type="checkbox"/> Yes | <input type="checkbox"/> No* | <input checked="" type="checkbox"/> N/A |
| Impact on plant? | <input type="checkbox"/> Yes | <input type="checkbox"/> No* | <input checked="" type="checkbox"/> N/A |
| Other: | <u>N/A</u> | | |
| Comments: | <u>None</u> | | |
5. Are the following records maintained at the plant:
- | | | | |
|--------------------------------|---|------------------------------|---|
| Equipment maintenance records | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* | <input type="checkbox"/> N/A |
| Operational Log | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* | <input type="checkbox"/> N/A |
| Industrial contributor records | <input type="checkbox"/> Yes | <input type="checkbox"/> No* | <input checked="" type="checkbox"/> N/A |
| Instrumentation records | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* | <input type="checkbox"/> N/A |
| Sampling and testing records | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* | <input type="checkbox"/> N/A |
6. Are records maintained at a different location?
Where are the records maintained?
- | | |
|-----------------------------------|--|
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
| <u>All are available on site.</u> | |
7. Were the records reviewed during the inspection
- | | |
|------------------------------|--|
| <input type="checkbox"/> Yes | <input checked="" type="checkbox"/> No |
|------------------------------|--|
8. Are the records adequate and the O & M Manual current?
O&M Manual date written: July 27, 1998 with subsequent updates
Date DEQ approved O&M: April 6, 2006
- | | | |
|------------------------------|------------------------------|--|
| <input type="checkbox"/> Yes | <input type="checkbox"/> No* | <input type="checkbox"/> N/A <u>Not reviewed</u> |
|------------------------------|------------------------------|--|
9. Are the records maintained for required 3-year period?
- | | |
|---|------------------------------|
| <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* |
|---|------------------------------|

Comments: A process control system has been installed. Plant records are maintained either electronically or by hand.

(C) SAMPLING

- | | | | |
|--|---|------------------------------|------------------------------|
| 1. Are sampling locations capable of providing representative samples? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* | <input type="checkbox"/> N/A |
| 2. Do sample types correspond to those required by the permit? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* | <input type="checkbox"/> N/A |
| 3. Do sampling frequencies correspond to those required by the permit? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* | <input type="checkbox"/> N/A |
| 4. Are composite samples collected in proportion to flow? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* | <input type="checkbox"/> N/A |
| 5. Are composite samples refrigerated during collection? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* | <input type="checkbox"/> N/A |
| 6. Does plant maintain required records of sampling? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* | <input type="checkbox"/> N/A |
| 7. Does plant run operational control tests? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* | <input type="checkbox"/> N/A |

Comments:

(D) TESTING

1. Who performs the testing? ☒ Plant/ Lab
☐ Central Lab
☒ Commercial Lab - Name: Air, Water & Soil and CBI Laboratories

If plant performs any testing, complete 2-4.

2. What method is used for chlorine analysis? N/A
- | | | | |
|---|---|------------------------------|------------------------------|
| 3. Is sufficient equipment available to perform required tests? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* | <input type="checkbox"/> N/A |
| 4. Does testing equipment appear to be clean and/or operable? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No* | <input type="checkbox"/> N/A |

Comments: Please see enclosed DEQ *Laboratory Inspection Report*.

(E) FOR INDUSTRIAL FACILITIES W/ TECHNOLOGY BASED LIMITS

1. Is the production process as described in the permit application? (If no, describe changes in comments)
☒ Yes ☐ No* ☐ N/A
2. Do products and production rates correspond to the permit application? (If no, list differences in comments section)
☒ Yes ☐ No* ☐ N/A
3. Has the State been notified of the changes and their impact on plant effluent?
☐ Yes ☐ No* ☒ N/A

Comments: None

UNIT PROCESS: Ponds/Lagoons

- | | | | |
|---|---|--|--|
| 1. Type: | <input checked="" type="checkbox"/> Aerated | <input type="checkbox"/> Unaerated | <input type="checkbox"/> Polishing |
| 2. No. of cells: | <u>2</u> | | |
| Number in Operation: | <u>2</u> | | |
| 3. Color: | <input type="checkbox"/> Green | <input type="checkbox"/> D. Brown | <input type="checkbox"/> L. Brown |
| | <input checked="" type="checkbox"/> Other | <i>clear to light green</i> | |
| 4. Odor: | <input type="checkbox"/> Septic * | <input type="checkbox"/> Earthy | <input checked="" type="checkbox"/> None |
| | <input type="checkbox"/> Other: | | |
| 5. System operated in: | <input checked="" type="checkbox"/> Series | <input type="checkbox"/> Parallel | <input type="checkbox"/> N/A |
| 6. If aerated, are lagoon contents mixed adequately? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No * | <input type="checkbox"/> N/A |
| 7. If aerated, is aeration system operating properly? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No * | <input type="checkbox"/> N/A |
| 8. Evidence of following problems: | | | |
| a. Vegetation in lagoon or dikes? | <input type="checkbox"/> Yes * | <input checked="" type="checkbox"/> No | |
| b. Rodents burrowing on dikes? | <input type="checkbox"/> Yes * | <input checked="" type="checkbox"/> No | |
| c. Erosion? | <input type="checkbox"/> Yes * | <input checked="" type="checkbox"/> No | |
| d. Sludge bars? | <input type="checkbox"/> Yes * | <input checked="" type="checkbox"/> No | |
| e. Excessive foam? | <input type="checkbox"/> Yes * | <input checked="" type="checkbox"/> No | |
| f. Floating material? | <input type="checkbox"/> Yes * | <input checked="" type="checkbox"/> No | |
| 9. Fencing intact? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No * | |
| 10. Grass maintained properly: | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 11. Level control valves working properly? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No * | <input type="checkbox"/> N/A |
| 12. Effluent discharge elevation: | <input checked="" type="checkbox"/> Top | <input type="checkbox"/> Middle | <input type="checkbox"/> Bottom |
| 13. Available freeboard: | <u>approx. 3 ft.</u> | | |
| 14. Appearance of effluent: | <input type="checkbox"/> Good | <input type="checkbox"/> Fair | <input type="checkbox"/> Poor * N/A |
| 15. Are monitoring wells present? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| Are wells adequately protected from runoff? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No * | <input type="checkbox"/> N/A |
| Are caps on and secured? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No * | <input type="checkbox"/> N/A |
| 16. General condition: | <input checked="" type="checkbox"/> Good | <input type="checkbox"/> Fair | <input type="checkbox"/> Poor* |

Comments: The two aerated lagoons operate in series and receive condensate water from the evaporators. The plant evaporators are occasionally cleaned with H_2SO_4 or HNO_3 . This cleaning solution is placed in a tank and metered into the lagoon system. Each lagoon has a curtain to improve biological treatment and extend retention time. Nitrifying bacteria (Nitrobacter and Nitrosomonas) are added near the influent to the first lagoon. A backup generator allows aeration to continue during power outages. #9 – A couple of gaps, used for lagoon access, noted in perimeter fencing.

UNIT PROCESS: Sludge Holding Lagoon

- | | | | |
|---|---|---|---|
| 1. Type: | <input type="checkbox"/> Aerated | <input checked="" type="checkbox"/> Unaerated | <input type="checkbox"/> Polishing |
| 2. No. of cells: | <u>1</u> | | |
| Number in Operation: | <u>1</u> | | |
| 3. Color: | <input checked="" type="checkbox"/> Green | <input type="checkbox"/> D. Brown | <input type="checkbox"/> L. Brown <input type="checkbox"/> Grey |
| | <input type="checkbox"/> Other | | |
| 4. Odor: | <input type="checkbox"/> Septic * | <input type="checkbox"/> Earthy | <input checked="" type="checkbox"/> None |
| | <input type="checkbox"/> Other: | | |
| 5. System operated in: | <input type="checkbox"/> Series | <input type="checkbox"/> Parallel | <input checked="" type="checkbox"/> N/A |
| 6. If aerated, are lagoon contents mixed adequately? | <input type="checkbox"/> Yes | <input type="checkbox"/> No * | <input checked="" type="checkbox"/> N/A |
| 7. If aerated, is aeration system operating properly? | <input type="checkbox"/> Yes | <input type="checkbox"/> No * | <input checked="" type="checkbox"/> N/A |
| 8. Evidence of following problems: | | | |
| a. Vegetation in lagoon or dikes? | <input type="checkbox"/> Yes * | <input checked="" type="checkbox"/> No | |
| b. Rodents burrowing on dikes? | <input type="checkbox"/> Yes * | <input checked="" type="checkbox"/> No | |
| c. Erosion? | <input type="checkbox"/> Yes * | <input checked="" type="checkbox"/> No | |
| d. Sludge bars? | <input checked="" type="checkbox"/> Yes * | <input type="checkbox"/> No | |
| e. Excessive foam? | <input type="checkbox"/> Yes * | <input checked="" type="checkbox"/> No | |
| f. Floating material? | <input type="checkbox"/> Yes * | <input checked="" type="checkbox"/> No | |
| 9. Fencing intact? | <input type="checkbox"/> Yes | <input type="checkbox"/> No * | Not fenced |
| 10. Grass maintained properly: | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| 11. Level control valves working properly? | <input type="checkbox"/> Yes | <input type="checkbox"/> No * | <input checked="" type="checkbox"/> N/A |
| 12. Effluent discharge elevation: | <input type="checkbox"/> Top | <input type="checkbox"/> Middle | <input type="checkbox"/> Bottom <input checked="" type="checkbox"/> N/A |
| 13. Available freeboard: | <u>approx. 2 ft.</u> | | |
| 14. Appearance of effluent: | <input type="checkbox"/> Good | <input type="checkbox"/> Fair | <input type="checkbox"/> Poor * <input checked="" type="checkbox"/> N/A |
| 15. Are monitoring wells present? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No | |
| Are wells adequately protected from runoff? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No * | <input type="checkbox"/> N/A |
| Are caps on and secured? | <input checked="" type="checkbox"/> Yes | <input type="checkbox"/> No * | <input type="checkbox"/> N/A |
| 16. General condition: | <input type="checkbox"/> Good | <input type="checkbox"/> Fair | <input checked="" type="checkbox"/> Poor* |

Comments: Though sludge from the aerated lagoons has not been added to this sludge holding lagoon since approximately January 2006 solids from a recently installed DAF unit have been added. There is a sludge bar (from previous aerated lagoon sludge additions) visible at the center. Dried solids were noted at the time of inspection above the one foot freeboard line.

UNIT PROCESS: Flow Measurement**Outfall 002**

☐ Influent ☐ Intermediate ☒ Effluent

1. Type measuring device: 90° v-notch weir w/ultrasonic sensor
2. Present reading: Not obtained
3. Bypass channel? ☐ Yes ☒ No
 Metered? ☐ Yes ☐ No* ☒ N/A
4. Return flows discharged upstream from meter? ☐ Yes ☒ No
 If Yes, identify:
5. Device operating properly? ☒ Yes ☐ No*
6. Date of last calibration: 4/28/09
7. Evidence of following problems:
 - a. Obstructions? ☐ Yes* ☒ No
 - b. Grease? ☐ Yes* ☒ No
8. General condition: ☒ Good ☐ Fair ☐ Poor*

Comments: Effluent from the aerated lagoons flows through new DAF and UV units before discharging to outfall 002. The automatic sampler at this location is tied into the flow meter for flow proportional sampling. At the time of inspection, the discharge at outfall 002 was clear with a small number of tiny flecks of solids (probably algae). Sampling of O/F 002 by M. Dare at 1140 hrs. – pH: 6.22 SU, 16.7 deg C.

UNIT PROCESS: Flow Measurement

Outfall 995

☐ Influent ☐ Intermediate ☒ Effluent

1. Type measuring device: None
2. Present reading: Based on pump run times
3. Bypass channel?
Metered? ☐ Yes ☒ No
 ☐ Yes ☐ No* ☒ N/A
4. Return flows discharged upstream from meter?
If Yes, identify: N/A
5. Device operating properly? ☐ Yes ☐ No* ☒ N/A
6. Date of last calibration: N/A
7. Evidence of following problems:
 - a. Obstructions? ☐ Yes* ☒ No
 - b. Grease? ☐ Yes* ☒ No
8. General condition: ☒ Good ☐ Fair ☐ Poor*

Comments: Non-contact cooling water discharges through this outfall. There was no discharge from outfall 995 at the time of inspection.

UNIT PROCESS: Flow Measurement

Outfall 001

☐ Influent ☐ Intermediate ☐ Effluent

1. Type measuring device:
2. Present reading:
3. Bypass channel?
Metered? ☐ Yes ☐ No
 ☐ Yes ☐ No* ☐ N/A
4. Return flows discharged upstream from meter? ☐ Yes ☐ No
If Yes, identify:
5. Device operating properly? ☐ Yes ☐ No* ☐ N/A
6. Date of last calibration:
7. Evidence of following problems:
 - a. Obstructions? ☐ Yes* ☐ No
 - b. Grease? ☐ Yes* ☐ No
8. General condition: ☐ Good ☐ Fair ☐ Poor*

Comments: The flame dryer and associated air scrubber have been removed from service. This action has allowed for the elimination of any discharge from outfall 001, which included a potential cyanide component. Fish processing is now performed utilizing existing steam driers in conjunction with a new airless dryer.

UNIT PROCESS: Effluent/Plant Outfall

1. Type outfall: ☒ Shore based (995) ☒ Submerged (002)
2. Type if shore based: ☐ Wingwall ☒ Headwall ☐ Rip Rap ☐ N/A
3. Flapper valve? ☐ Yes ☒ No
4. Erosion of bank? ☐ Yes* ☒ No ☐ N/A
5. Effluent plume visible? ☐ Yes * ☒ No

Comments: None

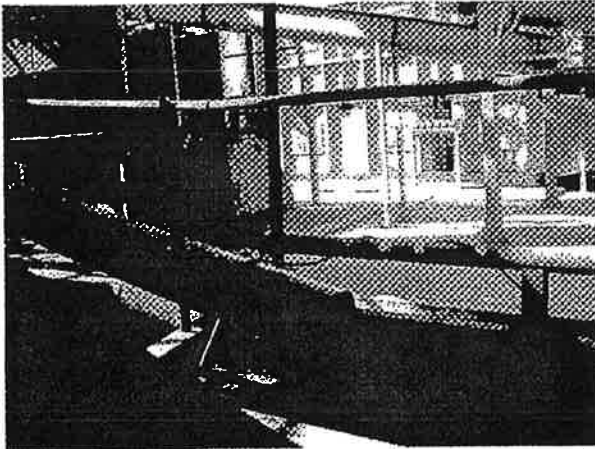
6. Condition of outfall and supporting structures: ☒ Good ☐ Fair ☐ Poor *
7. Final effluent, evidence of following problems:
 - a. Oil sheen? ☐ Yes* ☒ No
 - b. Grease? ☐ Yes* ☒ No
 - c. Sludge bar? ☐ Yes* ☒ No
 - d. Turbid effluent? ☐ Yes* ☒ No
 - e. Visible foam? ☐ Yes* ☒ No
 - f. Unusual odor? ☐ Yes* ☒ No

Comments: At the time of inspection, the discharge at outfall 002 was clear with a small number of tiny flecks of solids (probably algae); there was no discharge from outfall 995. (Sampling of O/F 002 by M. Dare at 1140 hrs. – pH: 6.22 SU, 16.7 deg C.) Bailwater (water used to remove fish from ship holds) is hauled by ship and discharged in the Atlantic Ocean. Refrigeration water is discharged in the Bay according to Permit requirements.

cc:

- ☒ Owner: c/o Mr. Robert La Bruzzo - General Manager
- ☒ Operator: Ted Schultz
- ☐ Local Health Department:
- ☐ VDH Engineering Field Office: Field Office
- ☐ VDH/Central Office - DWE
- ☒ DEQ - OWCP
- ☒ DEQ - Regional Office File
- ☒ EPA - Region III

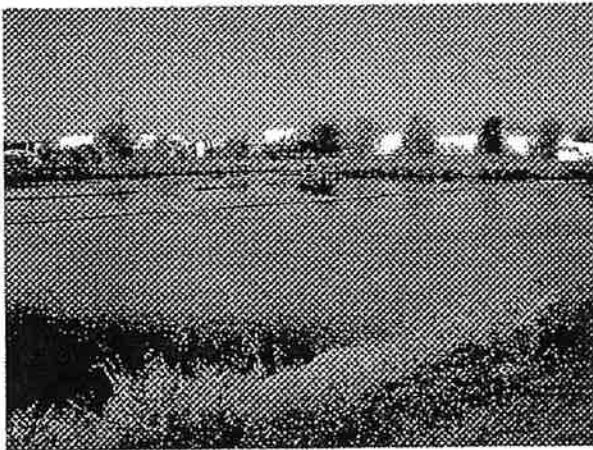
INSPECTION PHOTOS



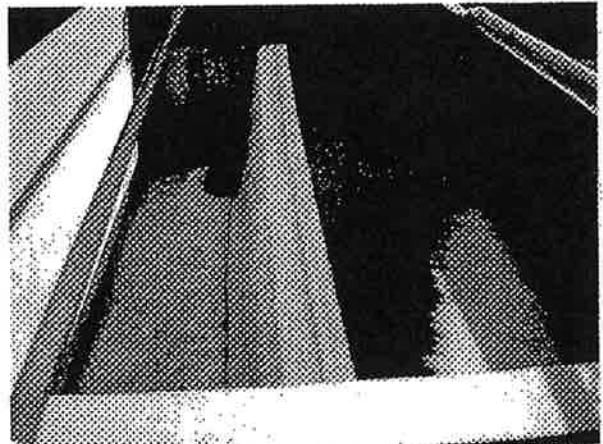
Non-contact cooling water discharges from pipe to O/F 995



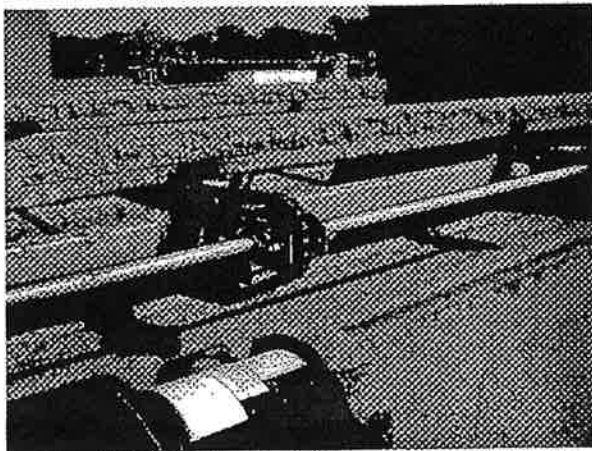
First of two in-series treatment lagoons



Second of two in-series treatment lagoons



Lagoon effluent flows through new DAF and UV units before discharging to outfall 002. Photo is of discharge from new DAF unit.



Solids discharge from new DAF unit



Solids from new DAF unit now routinely applied to Sludge lagoon

**DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION
LABORATORY INSPECTION REPORT**

Form Updated 10/4/2001

FACILITY NO: VA0003867	INSPECTION DATE: November 5, 2009	PREVIOUS INSP. DATE: August 5, 2008	PREVIOUS EVALUATION: (x) Deficiencies () No Deficiencies	TIME SPENT: 12 hours w/ travel & report
NAME/ADDRESS OF FACILITY: Omega Protein, Inc. PO Box 175 Reedville, VA 22539	FACILITY CLASS: (x) MAJOR () MINOR () SMALL () VPA/NDC	FACILITY TYPE: () MUNICIPAL (x) INDUSTRIAL () FEDERAL () COMMERCIAL LAB	UNANNOUNCED INSPECTION? (x) YES () NO	
			FY-SCHEDULED INSPECTION? (x) YES () NO	
INSPECTOR(S): Mike Dare <i>MDW 11-10-09</i>		REVIEWERS: <i>MAW 11/13/09 KDW 11/16/09</i>	PRESENT AT INSPECTION: Ted Schultz	

LABORATORY EVALUATION	DEFICIENCIES?	
	Yes	No
LABORATORY RECORDS	X	
GENERAL SAMPLING & ANALYSIS		X
LABORATORY EQUIPMENT	X	
pH ANALYSIS PROCEDURES		X

QUALITY ASSURANCE/QUALITY CONTROL			
Y/N	QUALITY ASSURANCE METHOD	PARAMETERS	FREQUENCY
N	REPLICATE SAMPLES		
N	SPIKED SAMPLES		
Y	STANDARD SAMPLES	pH	Daily
N	SPLIT SAMPLES		
N	SAMPLE BLANKS		
	OTHER		
	EPA-DMR PE SAMPLES?	RATING: () No Deficiency () Deficiency (X) NA	
	QC SAMPLES PROVIDED?	RATING: () No Deficiency () Deficiency (X) NA	

COPIES TO: (X) DEQ - RO; (X) OWCP; () VDH- FO and DWE; (X) OWNER; (X) EPA-Region III; (X) Other: Ted Schultz

LABORATORY RECORDS SECTION

LABORATORY RECORDS INCLUDE THE FOLLOWING:

<input checked="" type="checkbox"/>	SAMPLING DATE	<input checked="" type="checkbox"/>	ANALYSIS DATE	<input type="checkbox"/> N/A	CONT MONITORING CHART
<input checked="" type="checkbox"/>	SAMPLING TIME	<input checked="" type="checkbox"/>	ANALYSIS TIME	<input checked="" type="checkbox"/>	INSTRUMENT CALIBRATION
<input checked="" type="checkbox"/>	SAMPLE LOCATION	<input checked="" type="checkbox"/>	TEST METHOD	<input checked="" type="checkbox"/>	INSTRUMENT MAINTENANCE
				<input checked="" type="checkbox"/>	CERTIFICATE OF ANALYSIS

WRITTEN INSTRUCTIONS INCLUDE THE FOLLOWING:

<input checked="" type="checkbox"/>	SAMPLING SCHEDULES	<input checked="" type="checkbox"/>	CALCULATIONS	<input checked="" type="checkbox"/>	ANALYSIS PROCEDURES
-------------------------------------	--------------------	-------------------------------------	--------------	-------------------------------------	---------------------

	YES	NO	N/A
DO ALL ANALYSTS INITIAL THEIR WORK?	X		
DO BENCH SHEETS INCLUDE ALL INFORMATION NECESSARY TO DETERMINE RESULTS?	X		
IS THE DMR COMPLETE AND CORRECT? MONTH(S) REVIEWED: <i>VA0003867 and VAN020037 - September 2009</i>		X	
ARE ALL MONITORING VALUES REQUIRED BY THE PERMIT REPORTED?	X		

GENERAL SAMPLING AND ANALYSIS SECTION

	YES	NO	N/A
ARE SAMPLE LOCATION(S) ACCORDING TO PERMIT REQUIREMENTS?	X		
ARE SAMPLE COLLECTION PROCEDURES APPROPRIATE?	X		
IS SAMPLE EQUIPMENT CONDITION ADEQUATE?	X		
IS FLOW MEASUREMENT ACCORDING TO PERMIT REQUIREMENTS?	X		
ARE COMPOSITE SAMPLES REPRESENTATIVE OF FLOW?	X		
ARE SAMPLE HOLDING TIMES AND PRESERVATION ADEQUATE?	X		
IF ANALYSIS IS PERFORMED AT ANOTHER LOCATION, ARE SHIPPING PROCEDURES ADEQUATE? LIST PARAMETERS AND NAME & ADDRESS OF LAB: Air, Water and Soil, Laboratories, Inc., Richmond, VA - BOD, TSS, TKN, NH₃, NO₂/NO₃, NO₃, Total N, Ortho & Total P, Oil & Grease, Cyanide, Fecal Coliform, Enterococci, TOC, Copper, Silver, Zinc, Aluminum; CBI Laboratories, Gloucester, VA - Toxicity testing.	X		

LABORATORY EQUIPMENT SECTION

	YES	NO	N/A
IS LABORATORY EQUIPMENT IN PROPER OPERATING RANGE?	X		
ARE ANNUAL THERMOMETER CALIBRATION(S) ADEQUATE?		X	
IS THE LABORATORY GRADE WATER SUPPLY ADEQUATE?			X
ARE ANALYTICAL BALANCE(S) ADEQUATE?			X

LABORATORY INSPECTION REPORT SUMMARY

FACILITY NAME: Omega Protein, Inc.	FACILITY NO: VA0003867	INSPECTION DATE: November 5, 2009
OVERALL LABORATORY EVALUATION:	(x) Deficiencies () No Deficiencies	
LABORATORY RECORDS		
VA0003867, September 2009 DMR for outfall 002 When calculating BOD, use "0" in calculations for values <QL (5 mg/L). When calculating the geomean for fecal coliform, use 1 for values that are <1. When calculating total phosphorus, use "0" in calculations for values <QL (0.1 mg/L). There is no QL for oil and grease. Report laboratory results on DMR.		
VA0003867, September 2009 DMR for outfall 995 The QL for total copper is 7.4 ug/L. Report values less than this as "<QL." The QL for dissolved zinc is 72 ug/L. Report values less than this as "<QL." Because the above issues are minor, a resubmittal of the DMR's is not required.		
VAN020037, September 2009 DMR for outfall 501 The QL is the lowest standard in the calibration curve for a given analyte. If a value is <QL, use ½ the QL in calculations. Express concentration to the nearest 0.01 mg/L. Use 8.3438 lbs/gal as conversion factor. Express flow to nearest 0.01 MGD. Round daily loads to nearest whole number.		
VAN020037, September 2009 DMR for outfall 502 The QL is the lowest standard in the calibration curve for a given analyte. If a value is <QL, use ½ the QL in calculations. Express concentration to the nearest 0.01 mg/L. Use 8.3438 lbs/gal as conversion factor. Express flow to nearest 0.01 MGD. Round daily loads to nearest whole number except if zero; in which case it is recommended that daily loads are left as is and then rounded for monthly load.		
1. Using Nutrient General Permit Guidelines, please recalculate and resubmit Nutrient General DMR's for 2009, for outfalls 501, 502 and 500 (total of outfalls 501 & 502).		
GENERAL SAMPLING AND ANALYSIS		
None		
LABORATORY EQUIPMENT		
1. Begin maintaining a daily log of sample refrigerator and auto sampler temperatures.		
INDIVIDUAL PARAMETERS		
None		
COMMENTS		
None		

ANALYST:	Ted Schultz	VPDES NO	VA0003867
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Meter: Symphony VWR

Parameter: Hydrogen Ion (pH)
1/08

Method: Electrometric

METHOD OF ANALYSIS:

X	18 th Edition of Standard Methods – 4500-H ⁺ B
	21 st or Online Editions of Standard Methods – 4500-H ⁺ B (00)

pH is a method-defined analyte so modifications are not allowed. [40 CFR Part 136.6]		Y	N
1)	Is a certificate of operator competence or initial demonstration of capability available for <u>each analyst/operator</u> performing this analysis? NOTE: Analyze 4 samples of known pH. May use external source of buffer (different lot/manufacture than buffers used to calibrate meter). Recovery for each of the 4 samples must be +/- 0.1 SU of the known concentration of the sample. [SM 1020 B.1]	X	
2)	Is the electrode in good condition (no chloride precipitate, scratches, deterioration, etc.)? [2.b/c and 5.b]	X	
3)	Is electrode storage solution in accordance with manufacturer's instructions? [Mfr.]	X	
4)	Is meter calibrated on at least a daily basis using three buffers all of which are at the same temperature? [4.a] NOTE: Follow manufacturer's instructions.	X	
5)	After calibration, is a buffer analyzed as a check sample to verify that calibration is correct? Agreement should be within +/- 0.1 SU. [4.a]	X	
6)	Do the buffer solutions appear to be free of contamination or growths? [3.1]	X	
7)	Are buffer solutions within the listed shelf-life or have they been prepared within the last 4 weeks? [3.a]	X	
8)	Is the cap or sleeve covering the access hole on the reference electrode removed when measuring pH? [Mfr.]	N/A	
9)	For meters with ATC that also have temperature display, is the thermometer verified annually? [SM 2550 B.1]	X	
10)	Is temperature of buffer solutions and samples recorded when determining pH? [4.a]	X	
11)	Is sample analyzed within 15 minutes of collections? [40 CFR Part 136]	In-situ	
12)	Is the electrode rinsed and then blotted dry between reading solutions (Disregard if a portion of the next sample analyzed is used as the rinsing solution.)? [4.a]	X	
13)	Is the sample stirred gently at a constant speed during measurement? [4.b]	In-situ	
14)	Does the meter hold a steady reading after reaching equilibrium? [4.b]	X	
15)	Is a duplicate sample analyzed after every 20 samples if citing 18 th or 19 th Edition or daily for 20 th or 21 st Edition? [Part 1020] NOTE: Not required for <i>in situ</i> samples.	N/A	
16)	Is the pH of duplicate samples within 0.1SU of the original sample? [Part 1020]	N/A	
17)	Is there a written procedure for which result will be reported on DMR (Sample or Duplicate) and is this procedure followed? [DEQ]	N/A	

PROBLEMS: None

DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION
SAMPLE ANALYSIS HOLDING TIME/CONTAINER/PRESERVATION CHECK SHEET

Revised 3/08 [40 CFR, Part 136.3, Table II]

FACILITY NAME:		Omega Protein, Inc.				VPDES NO		VA0003867		DATE:		November 5, 2009		
HOLDING TIMES						SAMPLE CONTAINER				PRESERVATION				
PARAMETER	APPROVED	MET?		LOGGED?		ADEQ. VOLUME		APPROP. TYPE		APPROVED	MET?		CHECKED?	
		Y	N	Y	N	Y	N	Y	N		Y	N	Y	N
BOD5 & CBOD5	48 HOURS	X		X		X		X		ANALYZE 2 HRS or 6°C	X		X	
TSS	7 DAYS	X		X		X		X		6°C	X		X	
FECAL COLIFORM / <i>E. coli</i> / <i>Enterococci</i>	6 HRS & 2 HRS TO PROCESS	X		X		X		X		10°C (1 HOUR)+ 0.008% Na ₂ S ₂ O ₃	X		X	
pH	15 MIN.	X		X		X		X		N/A				
CHLORINE	15 MIN.									N/A				
DISSOLVED O ₂	15 MIN./IN SITU									N/A				
TEMPERATURE	IMMERSION STAB.									N/A				
OIL & GREASE	28 DAYS	X		X		X		X		6°C + H ₂ SO ₄ /HCL pH<2	X		X	
AMMONIA	28 DAYS	X		X		X		X		6°C + H ₂ SO ₄ pH<2 DECHLOR	X		X	
TKN	28 DAYS	X		X		X		X		6°C + H ₂ SO ₄ pH<2 DECHLOR	X		X	
NITRATE	48 HOURS									6°C				
NITRATE+NITRITE	28 DAYS	X		X		X		X		6°C + H ₂ SO ₄ pH<2	X		X	
NITRITE	48 HOURS	X		X		X		X		6°C	X		X	
PHOSPHATE, ORTHO	48 HOURS	X		X		X		X		FILTER, 6°C	X		X	
TOTAL PHOS.	28 DAYS	X		X		X		X		6°C+ H ₂ SO ₄ pH<2	X		X	
METALS (except Hg)	6 MONTHS	X		X		X		X		HNO ₃ pH<2	X		X	
MERCURY (CVAA)	28 DAYS									HNO ₃ pH<2				
PROBLEMS: None										PROBLEMS:		None		

**DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION
EQUIPMENT TEMPERATURE LOG/THERMOMETER VERIFICATION CHECK SHEET**

1/08

FACILITY NAME:		Omega Protein, Inc.			VPDES NO:		VA0003867		DATE:		November 5, 2009		
EQUIPMENT	RANGE	IN RANGE		INSPECT READING °C	CHECK & LOG DAILY		CORRECT INCREMENT		ANNUAL THERMOMETER VERIFICATION				
		Y	N		Y	N	Y	N	Is the NIST / NIST-Traceable Reference Thermometer within the manufacturer's expiration date or recertified yearly?				
									DATE CHECKED	MARKED		CORR FACTOR	INSPECT TEMP
SAMPLE REFRIGER.	1-6°C	X		0.9 °C		X	X		8/19/09	X		-0.2°C	
AUTO SAMPLER	1-6° C	X		002 – 3.0°C		X	X		8/19/09	X		0°C	
BOD INCUBATOR	20 ± 1° C												
SOLIDS DRYING OVEN	103-105° C												
WATER BATH	44.5 ± .2° C												
INCUBATOR	35± .5° C												
AUTOClave	121° C IN 30 MIN												
HOT AIR STERILIZING	170 ± 10° C												
O & G WATER BATH	70± 2° C												
REAGENT REFRIGER.	1-6° C												
pH METER	± 1° C								8/18/09	X		+0.1°C	
DO METER	± 1° C												
THERMOMETER-OUTFALL	± 1° C												
Hg WATER BATH	95 °C												

Comments: Outfall 995 currently composited manually.

Problems: Need to maintain daily log of sample refrigerator and auto sampler temperatures.

PERMITTEE NAME/ADDRESS (INCLUDE
FACILITY NAME/LOCATION IF DIFFERENT)

NAME Omega Protein - Reedville
ADDRESS PO Box 175
Reedville, VA 22530

FACILITY
LOCATION 610 Menhaden Rd

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF ENVIRONMENTAL QUALITY
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

DEPT. OF
(F)

Piedmont Rr
4949-A Cox

Glen Allen.

VA0003867			002		
PERMIT NUMBER			DISCHARGE NUMBER		
MONITORING PERIOD					
YEAR	MO	DAY	YEAR	MO	DAY
2009	09	01	2009	09	30

FROM

TO

NOTE: REA
BEF

Parameter		QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX.	FREQUENCY OF ANALYSIS	SAMPLE TYPE	LAB CODE
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM				
FLOW	REPORTD	0.161	0.258	MGD	*****	*****	*****	0	CONT	MEAS	
PARAM CODE: 001	REQRMNT	NL	NL		*****	*****	*****		CONT	MEAS	
PH	REPORTD	*****	*****		6.12	*****	7.97	0	2D/W	GRAB	
PARAM CODE: 002	REQRMNT	*****	*****		6.0	*****	9.0		2D/W	GRAB	
BOD5	REPORTD	145	269	KG/D	*****	*****	*****	0	2/M	24HC	
PARAM CODE: 003	REQRMNT	470	840		*****	*****	*****		2/M	24HC	
TSS	REPORTD	22	23	KG/D	*****	*****	*****	0	2/M	24HC	
PARAM CODE: 004	REQRMNT	160	410		*****	*****	*****		2/M	24HC	
COI FORM, FECAL	REPORTD	*****	*****		*****	4	*****	0	1/W	GRAB	
PARAM CODE: 006	REQRMNT	*****	*****		*****	NL	*****		1/W	GRAB	
PHOSPHORUS, TOTAL (AS P)	REPORTD	0.05	0.02	KG/D	*****	0.00	0.04	0	1/W	24HC	
PARAM CODE: 012	REQRMNT	19	*****		*****	2.0	*****		1/W	24HC	
AMMONIA, AS N	REPORTD	*****	*****		*****	14.1	15.6	0	2/M	24HC	
PARAM CODE: 039	REQRMNT	*****	*****		*****	38	45		2/M	24HC	

GENERAL PERMIT REQUIREMENTS OR COMMENTS
PARAMETER-SPECIFIC COMMENTS:

BYPASSES AND OVERFLOWS	TOTAL OCCURENCES	TOTAL FLOW (M.G.)	TOTAL BOD5 (K.G.)	OPERATOR IN RESPONSIBLE CHARGE					
0	0	0		Theodore Schultz		1911004868			
I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION. THE INFORMATION SUBMITTED IS TO THE BEST OF MY KNOWLEDGE AND BELIEF TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS SEE 18 U.S.C. & 1001 AND 33 U.S.C. & 1319 (Penalties under these statutes may include fines up to \$10,000 and/or maximum imprisonment of between 6 months and 5 years.)				TYPED OR PRINTED NAME		CERTIFICATE NUMBER			
				PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		TELEPHONE		804-453-4211	
				TYPED OR PRINTED NAME		SIGNATURE		YEAR MO. DAY	

Page 3

PERMITTEE NAME/ADDRESS (INCLUDE
FACILITY NAME/LOCATION IF DIFFERENT)

NAME Omega Protein - Reedville
ADDRESS PO Box 175
Reedville, VA 22539

FACILITY LOCATION 610 Menhaden Rd

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF ENVIRONMENTAL QUALITY
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

DEPT. OF (F)

Piedmont Rr
4949-A Cox

Glen Allen.

VA0003867	002
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD					
-------------------	--	--	--	--	--

YEAR	MO	DAY		YEAR	MO	DAY
2009	09	01	TO	2009	09	30

FROM

NOTE: REA
BEF

Parameter		QUANTITY OR LOADING			QUALITY OR CONCENTRATION			NO. EX.	FREQUENCY OF ANALYSIS	SAMPLE TYPE	LAB CODE
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM				
TEMPERATURE, WATER (DEG. C)	REPORTD	*****	*****		*****	24.8	28.2	0	2D/W	IS	
	REQRMNT	*****	*****		*****	NL	NL		2D/W	IS	
PARAM CODE: 080											
ENTEROCOCCI	REPORTD	*****	*****		*****	91.6	*****	0	1/W	GRAB	
	REQRMNT	*****	*****		*****	NL	*****		1/W	GRAB	
PARAM CODE: 140											
OIL & GREASE	REPORTD	25	46	KG/D	*****	*****	*****	0	2/M	GRAB	
	REQRMNT	25	46	KG/D	*****	*****	*****		2/M	GRAB	
PARAM CODE: 500											

GENERAL PERMIT REQUIREMENTS OR COMMENTS
PARAMETER-SPECIFIC COMMENTS

NO QL FOR OCG

BYPASSES AND OVERFLOWS	TOTAL OCCURENCES	TOTAL FLOW (M.G.)	TOTAL BODS (K.G.)	OPERATOR IN RESPONSIBLE CHARGE				
6	0	0	0	Theodore Schultz	1911004868			
I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED. BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION, THE INFORMATION SUBMITTED IS TO THE BEST OF MY KNOWLEDGE AND BELIEF TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS, SEE 18 U.S.C. & 1001 AND 33 U.S.C. & 1319. (Penalties under those statutes may include fines up to \$10,000 and/or maximum imprisonment of between 6 months and 5 years.)				TYPED OR PRINTED NAME		CERTIFICATE NUMBER		
				PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		TELEPHONE	804-453-4211	
				TYPED OR PRINTED NAME	SIGNATURE	YEAR	MO.	DAY

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VA0003867
Sep-09
O/F 002

DEQ check by M. Dare
Omega

	flow	BOD mg/l	BOD kg/d	TSS mg/l	TSS kg/d	temp	fecal	Ecocci
1	0.154					25		
2	0.164					24.7	4	2420
3	0.174					25.5		
4	0.18					24.9		
5	0.161					26		
6	0.203					27.5		
7	0.186					28.2		
8	0.127					26.2		
9	0.086					25.7		
10	0.154	46.2	3.785	26.9	4.6	3.785	2.7	
11	0.122					25.4	7	8.6
12	0.191					23.3		
13						20.9		
14								
15	0.198					24.5		
16	0.13					27.6		
17	0.133	0	3.785	0.0	3.3	3.785	1.7	
18	0.258					25.8	13	16
19	0.142					25		
20						26		
21								
22	0.138					24.3		
23	0.152					25.1	2	92
24	0.204					25.7		
25	0.1					25.8		
26	0.251					23.9		
27	0.132					22.5		
28	0.12					22.1		
29	0.2					22.1		
30	0.135					21.3	1	210
	0.161			13.5		24.8	4	92
	0.258			26.9		28.2		

<QL; USE "0" IS CALCULATION

Omega
VA0003867
Sep-09
O/F 002

DEQ check by M. Dare

	flow	TP mg/l	QL=.1 TP mg/l	TP kg/d	NH3 mg/l			
1	0.154							
2	0.164	0.18	0.18	3.785	0.11			
3	0.174							
4	0.18							
5	0.161							
6	0.203							
7	0.186							
8	0.127							
9	0.086							
10	0.154	0.08	0	0.00	15.6	10	3.785	6
11	0.122							
12	0.191							
13								
14								
15	0.198							
16	0.13							
17	0.133	0.06	0	0.00	12.6	10	3.785	5
18	0.258							
19	0.142							
20								
21								
22	0.138							
23	0.152	0.07	0	0.00				
24	0.204							
25	0.1							
26	0.251							
27	0.132							
28	0.12							
29	0.2							
30	0.135	0.06	0	0.00				
	0.161	0.09	0.04	0.02	14.1			5
	0.258				15.6			6

PERMITTEE NAME/ADDRESS (INCLUDE
FACILITY NAME/LOCATION IF DIFFERENT)

NAME Omega Protein - Reedville
ADDRESS PO Box 175
Reedville, VA 22539

FACILITY
LOCATION 610 Menhaden Rd

COMMONWEALTH OF VIRGINIA
DEPARTMENT OF ENVIRONMENTAL QUALITY
NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES)
DISCHARGE MONITORING REPORT (DMR)

DEPT. OF
(F)

Piedmont Rr
4949-A Cox

Glen Allen,

VA0003867	995
PERMIT NUMBER	DISCHARGE NUMBER

MONITORING PERIOD

YEAR	MO	DAY	TO	YEAR	MO	DAY
2009	09	01		2009	09	30

NOTE: REA
BEF

Parameter		QUANTITY OR LOADING			QUALITY OR CONCENTRATION			UNITS	NO. EX.	FREQUENCY OF ANALYSIS	SAMPLE TYPE	LAB CODE
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM					
FLOW	REPORTD	2.708	4.037	MGD	*****	*****	*****		0	CONT	EST	
PARAM CODE: 001	REQRMNT	NL	NL		*****	*****	*****			CONT	EST	
PH	REPORTD	*****	*****		6.91	*****	7.88	SU	0	5D/W	GRAB	
PARAM CODE: 002	REQRMNT	*****	*****		6.0	*****	9.0			5D/W	GRAB	
COPPER, TOTAL (AS CU)	REPORTD	*****	*****		*****	5.0 <i>QL</i>	5.0 <i>QL</i>	UG/L	0	1/M	24HC	
PARAM CODE: 019	REQRMNT	*****	*****		*****	NL	NL			1/M	24HC	
TEMPERATURE, WATER (DEG. C)	REPORTD	*****	*****		*****	30.5	34.3	C	0	1/DAY	IS	
PARAM CODE: 080	REQRMNT	*****	*****		*****	NL	45			1/DAY	IS	
SILVER, TOTAL RECOVERABLE	REPORTD	*****	*****		*****	<QL	<QL	UG/L	0	1/M	24HC	
PARAM CODE: 186	REQRMNT	*****	*****		*****	NL	NL			1/M	24HC	
ZINC, DISSOLVED (AS ZN) (UG/L)	REPORTD	*****	*****		*****	12.4 <i>QL</i>	12.4 <i>QL</i>	UG/L	0	1/M	GRAB	
PARAM CODE: 448	REQRMNT	*****	*****		*****	NL	NL			1/M	GRAB	

GENERAL PERMIT REQUIREMENTS OR COMMENTS:
PARAMETER-SPECIFIC COMMENTS

QL = 7.4 ug/l

BYPASSES AND OVERFLOWS	TOTAL OCCURENCES	TOTAL FLOW (M.G.)	TOTAL BOD5 (K.G.)	OPERATOR IN RESPONSIBLE CHARGE			
	0	0	0	Theodore Schultz		1911004868	
I CERTIFY UNDER PENALTY OF LAW THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED UNDER MY DIRECTION OR SUPERVISION IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY GATHER AND EVALUATE THE INFORMATION SUBMITTED BASED ON MY INQUIRY OF THE PERSON OR PERSONS WHO MANAGE THE SYSTEM OR THOSE PERSONS DIRECTLY RESPONSIBLE FOR GATHERING THE INFORMATION. THE INFORMATION SUBMITTED IS TO THE BEST OF MY KNOWLEDGE AND BELIEF TRUE, ACCURATE AND COMPLETE. I AM AWARE THAT THERE ARE SIGNIFICANT PENALTIES FOR SUBMITTING FALSE INFORMATION, INCLUDING THE POSSIBILITY OF FINE AND IMPRISONMENT FOR KNOWING VIOLATIONS SEE 18 U.S.C. & 1001 AND 33 U.S.C. & 1319 (Penalties under these statutes may include fines up to \$10,000 and/or maximum imprisonment of between 6 months and 5 years.)	TYPED OR PRINTED NAME		CERTIFICATE NUMBER				
	PRINCIPAL EXECUTIVE OFFICER OR AUTHORIZED AGENT		TELEPHONE		804-453-4211		
	TYPED OR PRINTED NAME		SIGNATURE		YEAR MO. DAY		

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COURTESY OF OMEGA

DMR Parameter Calcs

002

2006

TKN	9/2/2009	0.164	24.600	23.088	15.270	13.540
	9/10/2009	0.154	17.800	10.375		
	9/17/2009	0.133	14.700	7.400		
	9/23/2009	0.152	22.900	13.175		
	9/30/2009	0.135	25.400	12.979		
Total			105.400	59.199		
No. Weeks			5.000	5.000		
Nitrite + Nitrate	9/2/2009	0.164	0.001	0.001	0.001	0.209
	9/10/2009	0.154	0.001	0.001		
	9/17/2009	0.133	0.540	0.272		
	9/23/2009	0.152	0.450	0.259		
	9/30/2009	0.135	1.000	0.511		
Total			1.992	1.043		
No. Weeks			5.000	5.000		
Total Nitrogen	9/2/2009	0.164	24.601	15.271	12.048	
	9/10/2009	0.154	17.801	10.376		
	9/17/2009	0.133	15.240	7.672		
	9/23/2009	0.152	23.350	13.434		
	9/30/2009	0.135	26.400	13.490		
Total			107.392	60.242		
No. Weeks			5.000	5.000		
o-PO4	9/2/2009	0.164	0.001	0.001	0.001	0.001
	9/10/2009	0.154	0.001	0.001		
	9/17/2009	0.133	0.001	0.001		
	9/23/2009	0.152	0.001	0.001		
	9/30/2009	0.135	0.001	0.001		
Total			0.005	0.003		
No. Weeks			5.000	5.000		
Total P	9/2/2009	0.164	0.180	0.112	0.112	
	9/10/2009	0.154	0.080	0.047		
	9/17/2009	0.133	0.060	0.030		

← LQL of 0.1; treat as 0

11/5/2009

DMR Parameter calc-Sep09.xls

< QL of 0.1; treat as 0

DMR Parameter Calcs
002
2006

COURTESY OF OMEGA

9/23/2009	0.152	0.070	*****	*****	0.040	*****	*****
9/30/2009	0.135	0.060	*****	*****	0.031	*****	*****
Total	*****	0.450	*****	*****	0.259	*****	*****
No. Weeks	*****	5.000	*****	*****	5.000	*****	*****

COURTESY OF OMEGA

DMR Parameter Calcs
002
2006

Parameter	Date	Flow	Raw Data (mg/L)	Avg Raw	Max Raw	Kg/D	Avg (Kg/D)	Max (Kg/D)
	9/2/2009	0.164	*****	*****	*****	*****	*****	*****
	9/10/2009	0.154	*****	*****	*****	*****	*****	*****
	9/17/2009	0.133	*****	*****	*****	*****	*****	*****
	9/23/2009	0.152	*****	*****	*****	*****	*****	*****
	9/30/2009	0.135	*****	*****	*****	*****	*****	*****
TSS	9/10/2009	0.154	4.600	3.950	4.600	2.681	2.171	2.681
	9/17/2009	0.133	3.300	*****	*****	1.661	*****	*****
BOD	9/10/2009	0.154	46.200	25.100	46.200	26.930	14.472	26.930
	9/17/2009	0.133	4.000	*****	*****	2.014	*****	*****
O&G	9/10/2009	0.154	0.001	0.001	0.001	0.001	0.001	0.001
	9/17/2009	0.133	0.001	*****	*****	0.001	*****	*****
Z 10 ISO QL FOR O&G								
Fecal Coliform	9/2/2009	*****	4.000	*****	*****	*****	*****	*****
	9/10/2009	*****	7.000	*****	*****	*****	*****	*****
	9/17/2009	*****	13.000	*****	*****	*****	*****	*****
	9/23/2009	*****	2.000	*****	*****	*****	*****	*****
	9/30/2009	*****	0.001	*****	*****	*****	*****	*****
Total		*****	26.001	*****	*****	*****	*****	*****
No. Weeks		*****	5.000	*****	*****	*****	*****	*****
Exceeded								
Enterococci	9/2/2009	*****	2420.000	*****	*****	*****	*****	*****
	9/10/2009	*****	8.600	*****	*****	*****	*****	*****
	9/17/2009	*****	16.000	*****	*****	*****	*****	*****
	9/23/2009	*****	92.000	*****	*****	*****	*****	*****
	9/30/2009	*****	240.000	*****	*****	*****	*****	*****
Total		*****	2746.600	*****	*****	*****	*****	*****
No. Weeks		*****	5.000	*****	*****	*****	*****	*****
NH3	9/10/2009	*****	15.600	14.100	15.600	*****	*****	*****
	9/17/2009	*****	12.600	*****	*****	*****	*****	*****

L1 treat as 1

COMMONWEALTH OF VIRGINIA - DEPARTMENT OF ENVIRONMENTAL QUALITY
GENERAL PERMIT FOR TOTAL NITROGEN AND TOTAL PHOSPHORUS DISCHARGES AND NUTRIENT TRADING IN THE CHESAPEAKE BAY WATERSHED IN VIRGINIA
DISCHARGE MONITORING REPORT (DMR)

NAME Omega Protein - Reedville
 ADDRESS PO Box 175
 Reedville, VA 22555

FACILITY LOCATION 610 Menhaden Rd

RECEIVED
OCT 13 2009
PRO PRO

VAN020037			501		
PERMIT NUMBER			OUTFALL NUMBER		
MONITORING PERIOD					
YEAR	MO	DAY	YEAR	MO	DAY
09	09	01	TO	09	09 30

Department of Environmental Quality
 Piedmont Regional Office
 4949-A Cox Road
 Glen Allen, Virginia 23060-6296
 804-627-5020

NOTE: READ PERMIT AND GENERAL INSTRUCTIONS
 BEFORE COMPLETING.

PARAMETER		QUANTITY OR LOADING			QUALITY OR CONCENTRATION				NO. EX.	FREQUENCY OF ANALYSIS	SAMPLE TYPE
		AVERAGE	MAXIMUM	UNITS	MINIMUM	AVERAGE	MAXIMUM	UNITS			
001 FLOW	REPORTED	3.065	*****	MGD	*****	*****	*****		Ø	CONT	Rec
	PERMIT REQUIREMENT	NL	*****		*****	*****	*****				
012 PHOSPHORUS, TOTAL (AS P)	REPORTED	*****	*****		*****	0.66	*****	MG/L	Ø	1/w	24HC
	PERMIT REQUIREMENT	*****	*****		*****	NL	*****				
013 NITROGEN, TOTAL AS N	REPORTED	*****	*****		*****	8.18	*****	MG/L	Ø	1/w	24HC
	PERMIT REQUIREMENT	*****	*****		*****	NL	*****				
068 TKN (N-KJEL)	REPORTED	*****	*****		*****	8.06	*****	MG/L	Ø	1/w	24HC
	PERMIT REQUIREMENT	*****	*****		*****	NL	*****				
389 NITRITE+NITRATE-N, TOTAL	REPORTED	*****	*****	5400	*****	0.12	*****	MG/L	Ø	1/w	24HC
	PERMIT REQUIREMENT	*****	*****		*****	NL	*****				
791 NITROGEN, TOTAL AS N (MONTHLY LOAD)	REPORTED	*****	5383	LB/MO	*****	*****	*****		Ø	Month	Calc
	PERMIT REQUIREMENT	*****	NL		*****	*****	*****				
793 PHOSPHORUS, TOTAL (AS P) (MONTHLY LOAD)	REPORTED	*****	439.0	LB/MO	*****	*****	*****		Ø	Month	Calc
	PERMIT REQUIREMENT	*****	NL		*****	*****	*****				
795 ORTHOPHOSPHATE (AS P)	REPORTED	*****	*****	432	*****	0.29	*****	MG/L	Ø	1/w	24HC
	PERMIT REQUIREMENT	*****	*****		*****	NL	*****				

ADDITIONAL PERMIT REQUIREMENTS OR COMMENTS:

BYPASSES AND OVERFLOWS	Total Occurrences	Total Flow (MGD)	Total BOD ₅ (kg/d)	OPERATOR IN RESPONSIBLE CHARGE			DATE		
	None	Ø	Ø	THEODORE SCHULTZ	THEODORE SCHULTZ	1911004868	YEAR	MO	DAY
I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment. SEE 18 U.S.C. & 1001 AND 33 U.S.C. & 1319. (PENALTIES UNDER THESE STATUTES MAY INCLUDE FINES UP TO \$10,000 AND/OR MAXIMUM IMPRISONMENT OF BETWEEN 6 MONTHS AND 5 YEARS.)				TYPED OR PRINTED NAME	SIGNATURE	CERTIFICATE NO.	DATE		
				WILLIAM E PURCELL	WILLIAM E PURCELL	804-453-4211	YEAR	MO	DAY
				TYPED OR PRINTED NAME	SIGNATURE	Area Code/Number	DATE		
							09	10	08

From: cntrl scan
Sent: Monday, November 30, 2009 3:40 AM
To: Bishop,Patrick
Subject: VA0003867 WL W2009-11-P-1004

Attachments: VA000001.PDF



VA000001.PDF

Please open the attached document. It was sent to you using a Xerox WorkCentre.

Sent by: Guest [cntrlscan@deq.virginia.gov] Number of Images: 2 Attachment File Type: PDF

WorkCentre Location: PRO (Glen Allen) Compliance Room Device Name: PDMNT_Xerox5050
_Compliance



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

PIEDMONT REGIONAL OFFICE

4949-A Cox Road, Glen Allen, Virginia 23060

(804) 527-5020 Fax (804) 527-5106

www.deq.virginia.gov

L. Preston Bryant, Jr.
Secretary of Natural Resources

David K. Paylor
Director

November 30, 2009

Mr. Theodore Shultz, Technical Supervisor
Omega Protein, Inc.
P.O. Box 175
Reedville, VA 22539

WARNING LETTER

RE: **WL # W2009-11-P-1004**
Omega Protein, Inc.
VPDES Permit No. VA0003867 (reissued December 2, 2005)

Dear Mr. Schultz:

The Department of Environmental Quality (DEQ), Piedmont Regional Office (PRO) has reason to believe that Omega Protein, Inc. may be in violation of State Water Control Law. An incident report received on October 27, 2009 along with follow-up information provided on November 13, 2009 has revealed the following:

- a) While fueling a vessel at approximately 0600 hours on October 27, 2009, equipment failure resulted in the release of approximately 50 gallons of diesel fuel into Cockrel Creek. Subsequent actions consisted of shutting off the fuel pump and the deployment of boom around the vessel/spill. Absorbent cloth was then used to remove the spilled fuel from Cockrel Creek. After reporting this incident to the National Response Center, representatives of the U.S. Coast Guard inspected the mitigation efforts on October 27, 2009. Based upon information provided by the permittee on November 13, 2009 the Coast Guard determined that no further action was required.

Ome ga Protein, Inc.
VPDES Permit No. VA0003867
Warning Letter
Page 2 of 2

Due to the adequacy of information previously provided in regards to this incident no written response to this correspondence is necessary. However, if you have obtained additional information please provide it, in writing, within 20 days of receipt of this correspondence. Be aware that continued facility compliance may be verified by on-site inspection or other appropriate means.

This Warning Letter is not an agency proceeding or determination, which may be considered a case decision under the Virginia Administrative Process Act, Va. Code § 2.2 - 4000 *et seq.* Your point of contact for resolution of these deficiencies will be **Mr. Mike Dare at (804) 527-5055**. Please contact him if you have any questions about the content of this letter or need additional guidance.

Sincerely,

A handwritten signature in dark ink, appearing to read 'K. Winter', is written over the word 'Sincerely,'.

Kyle Ivar Winter, P.E.
Deputy Regional Director

cc: M. Dare – DEQ-PRO Water Compliance (electronic copy)
D. Mosca – DEQ-PRO Water Permitting (electronic copy)
S. Morris – PRO Pollution Response (electronic copy)
File/ECM

Dare,Michael

From: Dare,Michael
Sent: Monday, November 30, 2009 2:23 PM
To: 'Ted Schultz'
Subject: RE: Laboratory Inspection Report
Attachments: Omega Lab Pg 2.pdf

Ted,

Attached is an updated page 2 of most recent lab inspection report. (I will replace page 2 in all copies on my end.)

Sample refrigerator/auto sampler temperatures would only need to be logged for days when they hold permit required samples.

Mike Dare
Water Inspector
Virginia Department of Environmental Quality
Piedmont Regional Office
4949-A Cox Road
Glen Allen, VA 23060
Phone: 804-527-5055
Fax: 804-527-5106

From: Ted Schultz [mailto:tschultz@OmegaProteinInc.com]
Sent: Monday, November 30, 2009 10:42 AM
To: Dare,Michael
Subject: Laboratory Inspection Report

I must disagree with checking "NO" for "Are annual thermometer calibrations adequate?" Why are they inadequate? I followed proper NIST procedures and each thermometer is labeled and traceable to the calibration records (although you didn't ask to see them). I understand the comment about maintaining a daily log of the refrigerator temp, but certainly this doesn't have anything to do with calibrations. Also on that comment, should it be added that the temperatures should be recorded when the unit is in use to hold samples. This isn't a hardship in the lab, because I pass by the refrigerator everyday. However, at the treatment lagoons samples are only composited for one 24hr period each week. Certainly you're not suggesting that I pay someone to come in on a Sunday to check the refrigerator temp, when the fridge won't actually be used until the Tuesday to Wednesday collection period.

Theodore (Ted) Schultz

*Technical Supervisor
Omega Protein, Inc
PO Box 175
610 Menhaden Road
Reedville, VA 22539
Land: (804) 453-4211
Cell: 1-804-516-0534*

11/30/2009

Dare, Michael

From: Dare, Michael
Sent: Monday, November 30, 2009 2:52 PM
To: 'Ted Schultz'
Subject: RE: Laboratory Inspection Report
Attachments: Omega Lab Pg 6.pdf

Ted,

I went ahead and modified page 6 of the lab report (attached) to reflect that log of temps is only required for days when permit required samples are held.

Thanks,

Mike Dare
Water Inspector
Virginia Department of Environmental Quality
Piedmont Regional Office
4949-A Cox Road
Glen Allen, VA 23060
Phone: 804-527-5055
Fax: 804-527-5106

From: Ted Schultz [mailto:tschultz@OmegaProteinInc.com]
Sent: Monday, November 30, 2009 10:42 AM
To: Dare, Michael
Subject: Laboratory Inspection Report

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Theodore (Ted) Schultz

*Technical Supervisor
Omega Protein, Inc
PO Box 175
610 Menhaden Road
Reedville, VA 22539
Land: (804) 453-4211
Cell: 1-804-516-0534*

11/30/2009

LABORATORY RECORDS SECTION

LABORATORY RECORDS INCLUDE THE FOLLOWING:

<input checked="" type="checkbox"/>	SAMPLING DATE	<input checked="" type="checkbox"/>	ANALYSIS DATE	<input type="checkbox"/> N/A	CONT MONITORING CHART
<input checked="" type="checkbox"/>	SAMPLING TIME	<input checked="" type="checkbox"/>	ANALYSIS TIME	<input checked="" type="checkbox"/>	INSTRUMENT CALIBRATION
<input checked="" type="checkbox"/>	SAMPLE LOCATION	<input checked="" type="checkbox"/>	TEST METHOD	<input checked="" type="checkbox"/>	INSTRUMENT MAINTENANCE
				<input checked="" type="checkbox"/>	CERTIFICATE OF ANALYSIS

WRITTEN INSTRUCTIONS INCLUDE THE FOLLOWING:

<input checked="" type="checkbox"/>	SAMPLING SCHEDULES	<input checked="" type="checkbox"/>	CALCULATIONS	<input checked="" type="checkbox"/>	ANALYSIS PROCEDURES
-------------------------------------	--------------------	-------------------------------------	--------------	-------------------------------------	---------------------

	YES	NO	N/A
DO ALL ANALYSTS INITIAL THEIR WORK?	<input checked="" type="checkbox"/>		
DO BENCH SHEETS INCLUDE ALL INFORMATION NECESSARY TO DETERMINE RESULTS?	<input checked="" type="checkbox"/>		
IS THE DMR COMPLETE AND CORRECT? MONTH(S) REVIEWED: VA0003867 and VAN020037 - September 2009		<input checked="" type="checkbox"/>	
ARE ALL MONITORING VALUES REQUIRED BY THE PERMIT REPORTED?	<input checked="" type="checkbox"/>		

GENERAL SAMPLING AND ANALYSIS SECTION

	YES	NO	N/A
ARE SAMPLE LOCATION(S) ACCORDING TO PERMIT REQUIREMENTS?	<input checked="" type="checkbox"/>		
ARE SAMPLE COLLECTION PROCEDURES APPROPRIATE?	<input checked="" type="checkbox"/>		
IS SAMPLE EQUIPMENT CONDITION ADEQUATE?	<input checked="" type="checkbox"/>		
IS FLOW MEASUREMENT ACCORDING TO PERMIT REQUIREMENTS?	<input checked="" type="checkbox"/>		
ARE COMPOSITE SAMPLES REPRESENTATIVE OF FLOW?	<input checked="" type="checkbox"/>		
ARE SAMPLE HOLDING TIMES AND PRESERVATION ADEQUATE?	<input checked="" type="checkbox"/>		
IF ANALYSIS IS PERFORMED AT ANOTHER LOCATION, ARE SHIPPING PROCEDURES ADEQUATE? LIST PARAMETERS AND NAME & ADDRESS OF LAB: Air, Water and Soil, Laboratories, Inc., Richmond, VA - BOD, TSS, TKN, NH3, NO2/NO3, NO3, Total N, Ortho & Total P, Oil & Grease, Cyanide, Fecal Coliform, Enterococci, TOC, Copper, Silver, Zinc, Aluminum; CBI Laboratories, Gloucester, VA - Toxicity testing.	<input checked="" type="checkbox"/>		

LABORATORY EQUIPMENT SECTION

	YES	NO	N/A
IS LABORATORY EQUIPMENT IN PROPER OPERATING RANGE?	<input checked="" type="checkbox"/>		
ARE ANNUAL THERMOMETER CALIBRATION(S) ADEQUATE?	<input checked="" type="checkbox"/>		
IS THE LABORATORY GRADE WATER SUPPLY ADEQUATE?			<input checked="" type="checkbox"/>
ARE ANALYTICAL BALANCE(S) ADEQUATE?			<input checked="" type="checkbox"/>

INADVERTENTLY INDICATED AS "NO" ON ORIGINAL REPORT

**DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION
EQUIPMENT TEMPERATURE LOG/THERMOMETER VERIFICATION CHECK SHEET**

1/08

FACILITY NAME:		Omega Protein, Inc.		VPDES NO:		VA0003867		DATE:		November 5, 2009			
EQUIPMENT	RANGE	IN RANGE		INSPECT READING °C	CHECK & LOG DAILY		CORRECT INCREMENT		ANNUAL THERMOMETER VERIFICATION				
		Y	N		Y	N	Y	N	Is the NIST / NIST-Traceable Reference Thermometer within the manufacturer's expiration date or recertified yearly?			Y	
									DATE CHECKED	MARKED		CORR FACTOR °C	INSPECT TEMP °C
SAMPLE REFRIGER.	1-6°C	X		0.9 °C		X	X		8/19/09	X		-0.2°C	
AUTO SAMPLER	1-6° C	X		002 - 3.0°C		X	X		8/19/09	X		0°C	
BOD INCUBATOR	20 ± 1° C												
SOLIDS DRYING OVEN	103-105° C												
WATER BATH	44.5 ± .2° C												
INCUBATOR	35± .5° C												
AUTOClave	121° C IN 30 MIN												
HOT AIR STERILIZING	170 ± 10° C												
O & G WATER BATH	70± 2° C												
REAGENT REFRIGER.	1-6° C												
pH METER	± 1° C								8/18/09	X		+0.1°C	
DO METER	± 1° C												
THERMOMETER-OUTFALL	± 1° C												
Hg WATER BATH	95 °C												

Comments: Outfall 995 currently composited manually

Problems: Need to maintain log of sample refrigerator and auto sampler temperatures for days that permit required samples are held.

Dare,Michael

From: Bill Purcell [bpurcell@OmegaProteinInc.com]
Sent: Friday, December 04, 2009 8:35 AM
To: Dare,Michael
Subject: RE: 30 gallon oil spill

Thanks will do. Contractor that caused the problem is cleaning up the shore to prevent any further problems

William E. Purcell
Environmental Manager
Omega Protein, Inc.
P.O. Box 175
610 Menhaden Road
Reedville, Virginia 22539
bpurcell@omegaproteininc.com
Phone (804) 453-4211
Cell (804) 387-2784
Fax (804) 453-4123

From: Dare,Michael [mailto:Michael.Dare@deq.virginia.gov]
Sent: Friday, December 04, 2009 8:26 AM
To: Bill Purcell
Cc: Bishop,Patrick; Morris,Stephen
Subject: 30 gallon oil spill

Bill,

Please submit a 5-day follow-up letter regarding the fish oil spill reported 12/3/09.

Thanks,

Mike Dare

Water Inspector.

Virginia Department of Environmental Quality

Piedmont Regional Office

4949-A Cox Road

Glen Allen, VA 23060

Phone: 804-527-5055

Fax: 804-527-5106

From: Dare, Michael
Sent: Friday, December 04, 2009 8:26 AM
To: 'bpurcell@omegaproteininc.com'
Cc: Bishop, Patrick; Morris, Stephen
Subject: 30 gallon oil spill

Bill,

Please submit a 5-day follow-up letter regarding the fish oil spill reported 12/3/09.

Thanks,

Mike Dare

Water Inspector

Virginia Department of Environmental Quality

Piedmont Regional Office

4949-A Cox Road

Glen Allen, VA 23060

Phone: 804-527-5055

Fax: 804-527-5106

Dare, Michael

From: Ted Schultz [tschultz@OmegaProteinInc.com]
Sent: Tuesday, December 15, 2009 8:04 AM
To: Dare, Michael
Cc: Bill Purcell
Subject: Follow-up on oil spill of 12/3/09

Dear Mike,

On Dec 3, 2009 approximately 30 gallons of fish oil spilled into the creek. The spill came from the old Ampro area where we are tearing down some of the old storage tanks. The scrap company began dismantling one of the tanks Dec 2, 2009 to find some residual bottom oil sediment, which was probably 15+ years old and very thick. It was contained; however, overnight on Dec 2-3 we had a torrential rain storm which washed some of it into the creek. We cleaned most of it up on Dec 2nd around the shoreline, and the Coast Guard was called and notified. The oil remaining around the tank was cleaned up on Dec 3, 2009 by the scrap company with a suction truck. The remainder of the spill was remediated.

Ted Schultz

Omega Protein, Inc.
610 Menhaden Road
Reedville, VA 22539
Phone 804.453.4211 ext 120 | Fax 804.453.4123
Email tschultz@OmegaProteinInc.com | <http://www.omegaproteininc.com>

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12/16/2009

From: Ted Schultz [tschultz@OmegaProteinInc.com]
Sent: Tuesday, December 15, 2009 10:07 AM
To: Bishop,Patrick
Cc: Bill Purcell
Subject: Chesapeake Bay Samples for Nov

Patrick,

Just to elaborate on not pulling the Chesapeake Bay samples in November. We had one day early in the month when we could have gone out. As I recall, the day was not conducive to either my or the sampling boat pilot's schedules and it was early in the month so we didn't worry about running out of time. Unbeknownst to us, due to weather and fishing conditions for the rest of the month, it was not possible to get samples. As such, we sampled at our next opportunity (and only) 12/8/09 and sampled from 4 boats, using the first two for the November requirement and the second two for December.

Ted Schultz

Omega Protein, Inc.
610 Menhaden Road
Reedville, VA 22539
Phone 804.453.4211 ext 120 | **Fax** 804.453.4123
Email tschultz@OmegaProteinInc.com | <http://www.omegaproteininc.com>

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From: Bill Purcell [bpurcell@OmegaProteinInc.com]
Sent: Tuesday, December 15, 2009 10:55 AM
To: Bishop,Patrick
Subject: RE: Chesapeake Bay Samples for Nov

Just to clarify. We caught fish one day in November and one day in December. We try to go out when the wind is not blowing particularly late in the season when the water is cold for safety and logistical reason reasons. As the one who collects the samples it is very difficult to collect the samples when you are in a small boat in 4ft seas.

Due to weather conditions we did not catch fish again until last week when we collected samples for November and December. We have shut the factory down for the season and all the boats are being winterized and are tied up at the dock.

Thanks Bill

William E. Purcell
Environmental Manager
Omega Protein, Inc.
P.O. Box 175
610 Menhaden Road
Reedville, Virginia 22539
bpurcell@omegaproteininc.com
Phone (804) 453-4211
Cell (804) 387-2784
Fax (804) 453-4123

From: Bishop,Patrick [mailto:Patrick.Bishop@deq.virginia.gov]
Sent: Tuesday, December 15, 2009 10:30 AM
To: Ted Schultz
Cc: Bill Purcell
Subject: RE: Chesapeake Bay Samples for Nov

Thx.

Patrick L. Bishop
Piedmont Regional Office
4949-A Cox Road
Glen Allen, VA 23060
Direct - (804) 527-5127
Fax - (804) 527-5106
Patrick.Bishop@deq.virginia.gov

Always remember that you're unique...Just like everybody else. - Zen proverb

From: Ted Schultz [mailto:tschultz@OmegaProteinInc.com]
Sent: Tuesday, December 15, 2009 10:07 AM
To: Bishop,Patrick
Cc: Bill Purcell
Subject: Chesapeake Bay Samples for Nov

Patrick,

Just to elaborate on not pulling the Chesapeake Bay samples in November. We had one day early in the month when we could have gone out. As I recall, the day was not conducive to either my or the sampling boat pilot's schedules and it was early in the month so we didn't worry about running out of time. Unbeknownst to us, due to weather and fishing conditions for the rest of the month, it was not possible to get samples. As such, we sampled at our next opportunity (and only) 12/8/09 and sampled from 4 boats, using the first two for the November requirement and the second two for December.

Ted Schultz

Omega Protein, Inc.

610 Menhaden Road

Reedville, VA 22539

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From: cntrl scan
Sent: Monday, December 28, 2009 3:56 AM
To: Bishop,Patrick
Subject: VA0003867 Omega - WL W2009-12-P-1005

Attachments: VA000001.PDF



VA000001.PDF

Please open the attached document. It was sent to you using a Xerox WorkCentre.

Sent by: Guest [cntrlscan@deq.virginia.gov] Number of Images: 2 Attachment File Type: PDF

WorkCentre Location: PRO (Glen Allen) Compliance Room Device Name: PDMNT_Xerox5050
_Compliance



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

PIEDMONT REGIONAL OFFICE

4949-A Cox Road, Glen Allen, Virginia 23060

(804) 527-5020 Fax (804) 527-5106

www.deq.virginia.gov

L. Preston Bryant, Jr.
Secretary of Natural Resources

David K. Paylor
Director

December 28, 2009

Mr. Theodore Schultz, Technical Supervisor
Omega Protein, Inc.
P.O. Box 175
Reedville, VA 22539

WARNING LETTER

RE: **WL # W2009-12-P-1005**
Omega Protein, Inc.
VPDES Permit No. VA0003867 (reissued December 2, 2005)

Dear Mr. Schultz:

The Department of Environmental Quality (DEQ), Piedmont Regional Office (PRO) has reason to believe that Omega Protein, Inc. may be in violation of State Water Control Law. A review of our files has revealed the following:

- a) Permit required information submitted via the DEQ's eDMR application for the November 2009 monitoring period did not contain data in regards to the permit required monitoring of refrigeration water discharges required by Part I.B.3 of the above referenced VPDES Permit.

Please review the above and submit a written explanation within 20 days of receipt of this letter regarding the corrective actions your facility intends to take or has taken to correct the situation. Also, a time schedule for these corrective actions should be included.

Omega Protein, Inc.
VPDES Permit No. VA0003867
Warning Letter
Page 2 of 2

Your letter will assist our staff in maintaining a complete and accurate record of the compliance status of your facility. Continued facility compliance may be verified by on-site inspection or other appropriate means. If corrective action will take longer than 90 days please submit a plan and schedule for inclusion in a Letter of Agreement or Consent Order. Failure to respond may result in enforcement action by DEQ.

This Warning Letter is not an agency proceeding or determination, which may be considered a case decision under the Virginia Administrative Process Act, Va. Code § 2.2 - 4000 *et seq.* Your point of contact for resolution of these deficiencies will be **Mr. Mike Dare at (804) 527-5055**. Please contact him if you have any questions about the content of this letter or need additional guidance.

Sincerely,

A handwritten signature in dark ink, appearing to read 'K. Ivar Winter', is written over a faint, circular official stamp.

Kyle Ivar Winter, P.E.
Deputy Regional Director

cc: M. Dare – DEQ-PRO Water Compliance (electronic copy)
D. Mosca – DEQ-PRO Water Permitting (electronic copy)
File/ECM

From : Ted Schultz [tschultz@OmegaProteinInc.com]
Sent: Tuesday, April 27, 2010 9:03 AM
To: Bauer, Jaime (DEQ)
Subject: RE: Omega Protein VA0003867
Attachments: VA0003867 1 B 4 Cockrell Creek rev 1 - revised.doc

Jamie, I apologize Item 4 of the permit asks us to come up with a protocol for Cockrell Creek testing. The attached is what we came up with and was approved by DEQ. Note the italics, this was in response to Curt Lindeman's earlier comments.

Ted Schultz

Omega Protein, Inc.
610 Menhaden Road
Reedville, VA 22539
Phone 804.453.4211 ext 120 | **Fax** 804.453.4123
Email tschultz@OmegaProteinInc.com | <http://www.omegaproteininc.com>

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From: Bauer, Jaime (DEQ) [mailto:Jaime.Bauer@deq.virginia.gov]
Sent: Tuesday, April 27, 2010 8:32 AM
To: Ted Schultz
Subject: RE: Omega Protein VA0003867

Hi, Ted,

I have been going through the permit and fact sheet and haven't been able to find the reference to Cockrell Creek sampling 20feet away from Outfall 001. Is that part of the sampling plan that was submitted as required by the permit?

Jaime

Jaime L. Bauer | Environmental Specialist II | DEQ Piedmont Regional Office | 804.527.5015 |
jaime.bauer@deq.virginia.gov

From: Ted Schultz [mailto:tschultz@OmegaProteinInc.com]
Sent: Wednesday, April 21, 2010 11:51 AM
To: Bauer, Jaime (DEQ)
Subject: RE: Omega Protein VA0003867

Take your time, this won't be an issue until May.

Ted Schultz

Omega Protein, Inc.

610 Menhaden Road

Reedville, VA 22539

Phone 804.453.4211 ext 120 | **Fax** 804.453.4123

Email tschultz@OmegaProteinInc.com | <http://www.omegaproteininc.com>

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From: Bauer, Jaime (DEQ) [mailto:Jaime.Bauer@deq.virginia.gov]

Sent: Wednesday, April 21, 2010 11:15 AM

To: Bishop, Patrick (DEQ); Ted Schultz

Cc: Bill Purcell; Dare, Michael (DEQ)

Subject: RE: Omega Protein VA0003867

Ted,

I will need to look the permit and fact sheet to answer your question. I am working from home today and tomorrow and do not have a copy with me. I will get back with you on Friday. If you need a response before then, please let me know.

Jaime

Jaime L. Bauer | Environmental Specialist II | DEQ Piedmont Regional Office | 804.527.5015 |

jaime.bauer@deq.virginia.gov

From: Bishop, Patrick (DEQ)

Sent: Wednesday, April 21, 2010 9:53 AM

To: Ted Schultz; Bauer, Jaime (DEQ)

Cc: Bill Purcell; Dare, Michael (DEQ); Dunaway, Allison (DEQ)

Subject: RE: Omega Protein VA0003867

Jaime,

Would you please address Ted's inquiry?

Thx.

Patrick L. Bishop

Piedmont Regional Office

4949-A Cox Road

Glen Allen, VA 23060

Direct - (804) 527-5127
Fax - (804) 527-5106
Patrick.Bishop@deq.virginia.gov

Well done is better than well said. - Benjamin Franklin

From: Ted Schultz [mailto:tschultz@OmegaProteinInc.com]
Sent: Wednesday, April 21, 2010 9:01 AM
To: Bishop, Patrick (DEQ)
Cc: Bill Purcell
Subject: Omega Protein VA0003867

Patrick,

As I'm sure your aware we have removed the old flame dryer system and hence the scrubbers and hence Outfall 001. Obviously we will no longer be sampling that discharge pr doing WET testing on it. However, can I assume that Condition #4 (Cockrell Creek sampling) is no longer in effect for sampling 20 foot out from what (used to be 001)? Seems obvious to me, but I wanted something to fall back on should the DMR reviewer picks up on the change.

Ted Schultz

Omega Protein, Inc.
610 Menhaden Road
Reedville, VA 22539
Phone 804.453.4211 ext 120 | **Fax** 804.453.4123
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January 24, 2006

Ms. Denise Mosca
Department of Environmental Quality
4949-A Cox Road
Glen Allen, VA 23060-6296

Re: Revised Plan for Permit Reference 1 B 4

Dear Denise:

Our new VPDES permit (VA0003867) requires us to submit a plan for monitoring of Cockrell's Creek (1 B 4). We will sample in accordance with the plan as modified based on a letter received from Curtis Lindeman (via facsimile) dated January 13, 2006, concerning this matter. His letter indicated that the plan would be in compliance with the appropriate conditions once modified, as listed below. As such, the following plan is submitted for your review and approval.

Cockrell's Creek monitoring will occur at three sampling locations situated 20 ft. from outfalls 001, 002 and 995 (labeled "1", "2" and "3", respectively) on the attached map.

Sampling will commence at the end of the month in which we begin fishing, likely May 2006, and will occur on a monthly basis thereafter, during the fishing season. The permit requires sampling to commence within 30 days of the reissuance which would be January 9, 2006. Since the plant would not have processed within three weeks prior to or on that day, our first sampling will likely be in May. We have ceased fishing for the 2005 season. Therefore, the 30 day requirement will be fulfilled by the submittal of this letter. We will sample at a depth of one foot during a period of low slack tide. The sampling will be for the parameters of ammonia-nitrogen, temperature, pH and salinity. This sampling and the analysis performed will be done in accordance with the appropriate established standards. Quantification levels will be as documented in our permit. Results of this monitoring activity will be submitted on the month following the sampling, and with the normal DMR

If we can be of any further assistance in this matter, please contact Ted Schultz at (804) 453-4211 X120.

Sincerely,

Lyell Jett
General Manager

From: cntrlscan@deq.virginia.gov
Sent: Friday, January 22, 2010 4:24 AM
To: Bishop, Patrick (DEQ)
Subject: VPDES VA0003867 NOV W2010-01-P-0001

Attachments: VPDES001.PDF



VPDES001.PDF

Please open the attached document. It was sent to you using a Xerox WorkCentre.

Sent by: Guest [cntrlscan@deq.virginia.gov] Number of Images: 5 Attachment File Type: PDF

WorkCentre Location: PRO (Glen Allen) Compliance Room Device Name: PDMNT_Xerox5050
_Compliance



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

PIEDMONT REGIONAL OFFICE

4949-A Cox Road, Glen Allen, Virginia 23060

(804) 527-5020 Fax (804) 527-5106

www.deq.virginia.gov

Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

January 22, 2010

Mr. Theodore Schultz, Technical Supervisor
Omega Protein, Inc.
P.O. Box 175
Reedville, VA 22539

CERTIFIED MAIL
Return Receipt Requested
7001 1140 0003 7803 5675

NOTICE OF VIOLATION

RE: NOV No. **W2010-01-P-0001**
Omega Protein, Inc.
VPDES Permit No. VA0003867 (Reissued December 2, 2005)

Dear Mr. Schultz:

This letter notifies you of information upon which the Department of Environmental Quality ("Department" or "DEQ") may rely in order to institute an administrative or judicial enforcement action. Based on this information, DEQ has reason to believe that Omega Protein, Inc. may be in violation of the State Water Control Law and Regulations.

This letter addresses conditions at the facility named above, and also cites compliance requirements of the State Water Control Law and Regulations. Pursuant to Va. Code § 62.1-44.15 (8a), this letter is not a case decision under the Virginia Administrative Process Act, Va. Code § 2.2-4000 *et seq.* The Department requests that you respond **within 10 days of the date of this letter.**

OBSERVATIONS AND LEGAL REQUIREMENTS

Based upon a review of DEQ files, the following describe the staff's factual observations and identify the applicable legal requirements:

- a) Observation: While fueling a vessel at approximately 0600 hours on October 27, 2009, equipment failure resulted in the release of approximately 50 gallons of diesel fuel into Cockrell Creek.

Legal Requirement: Va. Code § 62.1-44.5 prohibits waste discharges or other quality alterations of state waters except as authorized by permit. 9 VAC 25-31-50 provides that "except in compliance with a VPDES permit, or another permit, issued by the board, it shall be unlawful for any person to discharge into state waters sewage, industrial wastes, other wastes, or any noxious or deleterious substances."

- b) Observation: Permit required information submitted via the DEQ's eDMR application for the November 2009 monitoring period did not contain data in regards to the permit required monitoring of refrigeration water discharges. required by Part I.B.3 of the above referenced VPDES Permit.

Legal Requirement: Part I.B.3.d of VPDES permit VA0003867 issued December 2, 2005 states "Monitoring of the designated area of the Chesapeake Bay (B.2.b.) for BOD₅, Ammonia, pH, Temperature, Dissolved Oxygen and Salinity, is required twice a month before and after the discharge, and the samples shall be grabbed at a depth of between six to eight feet below the surface of the water inside the visible discharge plume. These data shall be submitted with the DMR for that month to be received at the DEQ-Piedmont Regional Office by the tenth of the following month."

Va. Code § 62.1-44.5 prohibits waste discharges or other quality alterations of state waters except as authorized by permit. 9 VAC 25-31-50 provides that "except in compliance with a VPDES permit, or another permit, issued by the board, it shall be unlawful for any person to discharge into state waters sewage, industrial wastes, other wastes, or any noxious or deleterious substances."

- c) Observation: During the dismantling of a 2000 gallon above-ground storage tank on December 2, 2009 approximately 30 gallons of fish oil was released to Cockrell Creek. The initial report of this incident was received at the DEQ-PRO, from the Virginia Department of Emergency Management's Emergency Operations Center, on December 3, 2009. A written follow-up in regards to this incident was received via email on December 15, 2009.

Legal Requirement: Va. Code § 62.1-44.5 prohibits waste discharges or other quality alterations of state waters except as authorized by permit. 9 VAC 25-31-50 provides that "except in compliance with a VPDES permit, or another permit, issued by the board, it shall be unlawful for any person to discharge into state waters sewage, industrial wastes, other wastes, or any noxious or deleterious substances."

Part II.I. of VPDES Permit VA0003867 states "The permittee shall report any noncompliance which may adversely affect state waters or may endanger public health. An oral report shall be provided within 24 hours from the time the permittee becomes aware of the circumstances. A written report shall be submitted within 5 days and shall contain: A description of the noncompliance and its cause; The period of noncompliance, including exact dates and times, and if the noncompliance has not been corrected, the anticipated time it is expected to continue; and Steps taken or planned to reduce, eliminate, and prevent reoccurrence of the noncompliance."

- d) Observation: During a compliance inspection conducted November 5, 2009 a representative of the DEQ-PRO observed newly installed dissolved air floatation and ultraviolet disinfection units in operation at the treatment train discharging to permitted Outfall 002.

Legal Requirement: Part II.J.1.a of VPDES Permit VA0003867 states "The permittee shall give notice to the Department as soon as possible of any planned physical alterations or additions to the permitted facility. Notice is required only when: a. The permittee plans alteration or addition to any building, structure, facility, or installation from which there is or may be a discharge of pollutants, the construction of which commenced: (1) After promulgation of standards of performance under Section 306 of Clean Water Act which are applicable to such source; or (2) After proposal of standards of performance in accordance with Section 306 of Clean Water Act which are applicable to such source, but only if the standards are promulgated in accordance with Section 306 within 120 days of their proposal.

Va. Code § 62.1-44.5.A as well as Part II.F of VPDES Permit VA0003867 prohibit the discharge of sewage, industrial wastes, other wastes, or any other noxious or deleterious substances except as authorized by a permit or certificate issued by the State Water Control Board. Or to otherwise alter the physical, chemical or biological properties of such state waters and make them detrimental to the public health, or to animal or aquatic life, or to the use of such waters for domestic or industrial consumption, or for recreation, or for other uses."

ENFORCEMENT AUTHORITY

Va. Code § 62.1-44.23 of the State Water Control Law provides for an injunction for any violation of the State Water Control Law, any State Water Control Board rule or regulation, any order, permit condition, standard, or any certificate requirement or provision. Va. Code §§ 62.1-44.15 and 62.1-44.32 provide for a civil penalty up to \$32,500 per day of each violation of same. In addition, Va. Code § 62.1-44.15 authorizes the State Water Control Board to issue orders to any person to comply with the State Water Control Law and regulations, including the imposition of a civil penalty for

violations of up to \$100,000. Also, Va. Code § 10.1-1186 authorizes the Director of DEQ to issue special orders to any person to comply with the State Water Control Law and regulations, and to impose a civil penalty of not more than \$10,000. Va. Code §§ 62.1-44.32(b) and 62.1-44.32(c) provide for other additional penalties.

The Court has the inherent authority to enforce its injunction, and is authorized to award the Commonwealth its attorneys' fees and costs.

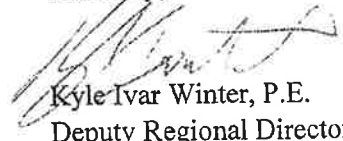
FUTURE ACTIONS

DEQ staff wishes to discuss all aspects of their observations with you, including any actions needed to ensure compliance with state law and regulations, any relevant or related measures you plan to take or have taken, and a schedule, as needed, for further activities. In addition, please advise us if you dispute any of the observations recited herein or if there is other information of which DEQ should be aware. In order to avoid adversarial enforcement action in the future, Omega Protein, Inc. may be asked to enter into a Consent Order with the Department to formalize a plan and schedule of corrective action and to settle any outstanding issues regarding this matter, including the payment of civil charges.

In the event that discussions with staff do not lead to a satisfactory conclusion concerning the contents of this letter, you may elect to participate in DEQ's Process for Early Dispute Resolution. If you complete the Process for Early Dispute Resolution and are not satisfied with the resolution, you may request in writing that DEQ take all necessary steps to issue a case decision where appropriate. For further information on the Process for Early Dispute Resolution, please visit the Department's website under "Laws & Regulations" and "DEQ regulations" at:
http://www.deq.virginia.gov/regulations/pdf/Process_for_Early_Dispute_Resolution_8260532.pdf
f or ask the DEQ contact listed below.

Ms. Allison Dunaway is your point of contact. Please contact her at (804) 527-5086 or via email at Allison.Dunaway@deq.virginia.gov within ten days of the date of this letter to discuss this matter.

Sincerely,



Kyle Ivar Winter, P.E.
Deputy Regional Director

Omega Protein, Inc.
VPDES Permit No. VA0003867
Notice of Violation
Page 5 of 5

cc: A. Dunaway – PRO Enforcement Manager (electronic copy)
M. Dare – PRO Water Compliance (electronic copy)
J. Bauer – PRO Water Permitting (electronic copy)
K. O'Connell – DEQ/OEA (electronic copy)

From: Bill Purcell [bpurcell@OmegaProteinInc.com]
Sent: Thursday, February 04, 2010 9:14 AM
To: Bauer, Jaime (DEQ)
Cc: Bill Purcell
Subject: Compliance schedule
Attachments: Compliance schedule.pdf

Jaime,
I have attached the letter regarding the compliance schedule in our permit as we discussed in our meeting. Please let me know if you need anything else. I will send hard copy via snail mail.

Thanks Bill

William E. Purcell
Environmental Manager
Omega Protein, Inc.
P.O. Box 175
610 Menhaden Road
Reedville, Virginia 22539
bpurcell@omegaproteininc.com
Phone (804) 453-4211
Cell (804) 387-2784
Fax (804) 453-4123



February 4, 2010

Ms. Jaime Bauer, Water Permit Writer
Virginia Dept of Environmental Quality
Piedmont Regional Office
4949-A Cox Road
Glen Allen, VA 23060

Re: Compliance Schedule

Dear Ms. Bauer:

As we discussed during our meeting of January 24, 2010 we are in compliance with our metals limits therefore no treatment is necessary. I hope you understand our position that the metals that showed up in the original permit application were the result of analytical difficulty due to interference from salt in the cooling water. As you are aware we simply pump salt water from Cockrell Creek and pass the water through a non-contact heat exchange and discharge with some additional heat. It is our hope that we can get some form of relief in the next permit issuance. We are also in compliance with our nutrient loadings with the elimination of the scrubber water discharge and the additional treatment from the DAF. A UV disinfection unit will be installed during the current off season to meet the fecal coliform and enterococci limits. We hope to get you the conceptual engineer plan of the changes in the next few weeks to documents the improvements that we have made.

If you have any questions I can be reached at bpurcell@omegaproteininc.com or by phone at (804) 453-4211.

Sincerely,

A handwritten signature in dark ink, appearing to read "Bill", written over a horizontal line.

William Purcell
Environmental Manager
Omega Protein, Inc.

From: Winter, Kyle (DEQ)
Sent: Tuesday, February 02, 2010 7:29 PM
To: Bishop, Patrick (DEQ)
Cc: Dunaway, Allison (DEQ)
Subject: FW: NOV response

Attachments: NOV response.pdf



NOV response.pdf

-----Original Message-----

From: Bill Purcell [mailto:bpurcell@OmegaProteinInc.com]
Sent: Tue 2/2/2010 4:39 PM
To: Winter, Kyle (DEQ)
Cc: Bill Purcell; Montgomery Deihl; Dennis Quick
Subject: NOV response

Attached is our response to the NOV. We will follow up with a hard copy.

William E. Purcell

Environmental Manager

Omega Protein, Inc.

P.O. Box 175

610 Menhaden Road

Reedville, Virginia 22539

bpurcell@omegaproteininc.com

Phone (804) 453-4211

Cell (804) 387-2784

Fax (804) 453-4123



February 2, 2010

Mr Kyle Ivar Winter, Deputy Regional Director
Virginia Dept of Environmental Quality
Piedmont Regional Office
4949-A Cox Road
Glen Allen, VA 23060

Re: NOV No. W2010-01-P-0001

Dear Mr. Winter: *Kyle*

We were disappointed to receive the above referenced NOV as Omega Protein, Inc. takes environmental compliance very seriously and strive to address issues to the best our ability. In reading the observations listed in the NOV there are factual errors that are that we believe have a direct bearing on whether the NOV should have been issued. We will address the items as they are referenced in the NOV.

- a) Observation: While fueling a vessel at approximately 0600 hours on October 27, 2009, equipment failure resulted in the release of approximately 50 gallons of diesel fuel into Cockrell Creek. Response: A vessel was not being fueled at the time of the release. The seal on the diesel pump for our fishing vessels failed some time during the early morning of October 27. The leak was discovered around daybreak (0600 hours) when the pump was immediately turned off, the area was boomed off and the National Response Center notified. The spill was contained within the boomed area and the diesel recovered with absorbent pads. The Coast Guard conducted a site inspection that morning and commended Omega for quick response and a complete clean-up. To prevent recurrence of another incident Omega removed the pump and ordered/installed an entirely new pumping system and we also installed a timer on the pump to avoid prolonged operating time which could result in this type incident.
- b) Observation: Permit required information submitted via the DEQ's eDMR application for the November 2009 monitoring period did not contain data in regards to the permit required monitoring of refrigeration water discharges required by Part I.B.3 of the above referenced permit. Response: The first fishing Omega did during the month of November was during the second week of that month. The weather conditions were extremely windy and cold making Bay sampling dangerous; at the time we fully believed we would have additional, safer opportunity to conduct required sampling. The weather in November was not good, and we did not fish the remainder of the month and thus did not have the opportunity to take samples. The next and last day fish were caught was December 8th. A double set of samples were collected on that day to make up for the missed November sampling. People at the plant cannot remember another November that

weather prevented Omega from catching fish. It is also worth pointing out that a Bay refrigeration sample has never shown values above background levels.

- c) Observation: During the dismantling of a 2000 gallon above ground storage tank on December 2, 2009 approximately 30 gallons of fish oil was released to Cockrell Creek. The initial report was received at the DEQ-PRO, from the Virginia Department of Emergency Management's Emergency Operations Center, on December 3, 2009. A written follow-up in regards to this incident was received via email on December 15, 2009. Response: The contractor that was working the Ampro site was given explicit instructions by the General Manager not to touch the 3 tanks at the Ampro site. There were two approximately 150,000-200,000 gallon fish soluble tanks and a smaller caustic tank. The contractor was told not to demolish the tanks because we were aware that there were tank bottoms remaining in the soluble tanks and we were going to take the tanks down from the top so the contents could be managed under controlled conditions. Instead the contractor breached the tank on December 2, 2009 and did not inform us. The contractor had been onsite since September 1, 2009 and we had no reason to believe the he would disregard our instructions. A significant rain event that occurred on December 2-3 washed approximately 30 gallons of fish oil in Cockrell Creek. Fish oil was observed at the plant on the morning of December 3 at which time we called the emergency response number. The spilled oil was cleaned from the creek and the site was remediated. The contractor was terminated.
- d) Observation: During a compliance inspection conducted on November 5, 2009 a representative of DEQ-PRO observed newly installed dissolved air flotation and ultraviolet disinfection units in operation at the treatment train discharging to permitted Outfall 002. Response: Correspondence was made with Denise Mosca regarding our progress to meet the permit compliance schedule for phosphorus, fecal coliforms and enterococci. A Conceptual Engineering Report will be submitted as requested.

I trust this clarifies the issues in the NOV. If you require additional information please contact me directly.

Sincerely,



William Purcell
Environmental Manager
Omega Protein, Inc.

pc: Monty Deihl
Dennis Quick

From: Bauer, Jaime (DEQ)
Sent: Tuesday, April 27, 2010 9:46 AM
To: 'Ted Schultz'
Cc: 'bpurcell@OmegaProteinInc.com'; Dare, Michael (DEQ); Bishop, Patrick (DEQ)
Subject: Omega Protein VA0003867 - C. Creek Monitoring

Thanks, Ted.

The approved Cockrell Creek monitoring protocol is incorporated as part of the permit by reference, and is therefore an enforceable part of the permit. Until such time that the protocol is revised and approved by our office, the previous plan should be followed even though there is no longer a discharge at Outfall 001. You should continue to monitor at a distance no less than 20 feet from Outfall 001.

I would like to suggest that you continue with the monitoring plan as it is approved for the remaining months of the VPDES permit. A revision to the plan can be submitted with the VPDES permit application due this June.

If you have any questions, please feel free to contact me.

Jaime

Jaime L. Bauer | Environmental Specialist II | DEQ Piedmont Regional Office | 804.527.5015 |
jaime.bauer@deq.virginia.gov

From: Ted Schultz [mailto:tschultz@OmegaProteinInc.com]
Sent: Tuesday, April 27, 2010 9:03 AM
To: Bauer, Jaime (DEQ)
Subject: RE: Omega Protein VA0003867

Jamie, I apologize Item 4 of the permit asks us to come up with a protocol for Cockrell Creek testing. The attached is what we came up with and was approved by DEQ. Note the italics, this was in response to Curt Lindeman's earlier comments.

Ted Schultz

Omega Protein, Inc.
610 Menhaden Road
Reedville, VA 22539
Phone 804.453.4211 ext 120 | **Fax** 804.453.4123
Email tschultz@OmegaProteinInc.com | <http://www.omegaproteininc.com>

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From: Bauer, Jaime (DEQ) [mailto:Jaime.Bauer@deq.virginia.gov]
Sent: Tuesday, April 27, 2010 8:32 AM
To: Ted Schultz
Subject: RE: Omega Protein VA0003867

Hi, Ted,

I have been going through the permit and fact sheet and haven't been able to find the reference to Cockrell Creek sampling 20feet away from Outfall 001. Is that part of the sampling plan that was submitted as required by the permit?

Jaime

Jaime L. Bauer | Environmental Specialist II | DEQ Piedmont Regional Office | 804.527.5015 |
jaime.bauer@deq.virginia.gov

From: Ted Schultz [mailto:tschultz@OmegaProteinInc.com]
Sent: Wednesday, April 21, 2010 9:01 AM
To: Bishop, Patrick (DEQ)
Cc: Bill Purcell
Subject: Omega Protein VA0003867

Patrick,

As I'm sure your aware we have removed the old flame dryer system and hence the scrubbers and hence Outfall 001. Obviously we will no longer be sampling that discharge pr doing WET testing on it. However, can I assume that Condition #4 (Cockrell Creek sampling) is no longer in effect for sampling 20 foot out from what (used to be 001)? Seems obvious to me, but I wanted something to fall back on should the DMR reviewer picks up on the change.

Ted Schultz

Omega Protein, Inc.
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Phone 804.453.4211 ext 120 | Fax 804.453.4123
Email tschultz@OmegaProteinInc.com | <http://www.omegaproteininc.com>

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From: Bill Purcell [bpurcell@OmegaProteinInc.com]
Sent: Monday, June 07, 2010 6:56 AM
To: Bauer, Jaime (DEQ)
Cc: Montgomery Deihl; Andy Hall
Subject: 002 Discharge request
Attachments: flex-request.pdf

Jaime

Attached is the request to discharge stripped condensate directly from outfall 002.

Bill

William E. Purcell
Environmental Manager
Omega Protein, Inc.
P.O. Box 175
610 Menhaden Road
Reedville, Virginia 22539
bpurcell@omegaproteininc.com
Phone (804) 453-4211
Cell (804) 387-2784
Fax (804) 453-4123



June 7, 2010

Ms. Jaime Bauer, Environmental Specialist III
Virginia Dept of Environmental Quality
Piedmont Regional Office
4949-A Cox Road
Glen Allen, VA 23060

Re: VA0003867

Dear Ms ~~Bauer~~: *Jaime*

To follow up on our conversation of Friday, June 4 2010 Omega requests the latitude to discharge dryer and evaporator condensate directly after ammonia stripping from outfall 002. During process control monitoring we have determined when we are processing high quality fresh fish, ammonia levels (<15 mg/l) are well under our permit limitations. Following stripping, condensate is sterile and clear without the algae and bacterial contributions that occur during treatment in the aerated ponds. This option would give additional flexibility to treat higher strength condensate in the aerated ponds that periodically occurs during the heavy fishing during the warm summer months.

Omega also requests that this treatment flexibility be incorporated into our VPDES permit during the current reissuance. Please contact me if you have any questions regarding this request.

Sincerely,

A handwritten signature in dark ink, appearing to read "William E. Purcell", is written over a horizontal line.

William E. Purcell
Environmental Manager
Omega Protein, Inc.

pc: Monty Deihl, Omega Protein

Dare, Michael

From: Dare, Michael
Sent: Thursday, January 07, 2010 12:19 PM
To: 'Ted Schultz'
Cc: Bill Purcell
Subject: RE: Inspection Report Resonse - Omega Wastewater Facility and Laboratory Inspections conducted November 5, 2009

Thank you for your email of January 7, 2010 in response to the reports for the subject inspections. The corrective actions outlined in your email adequately address the Recommendations and Deficiencies noted in the reports:

Sincerely,

Mike Dare
Water Inspector
Virginia Department of Environmental Quality
Piedmont Regional Office
4949-A Cox Road
Glen Allen, VA 23060
Phone: 804-527-5055
Fax: 804-527-5106

From: Ted Schultz [mailto:tschultz@OmegaProteinInc.com]
Sent: Thursday, January 07, 2010 11:33 AM
To: Dare, Michael
Cc: Bill Purcell
Subject: Inspection Report Resonse

On November 5, 2009 a Wastewater Facility and Laboratory Inspection was performed at our facility (VPDES Permit No. VA0003867) by Mike Dare, Water Inspector – DEQ. The inspection findings we're summarized in a letter to Mr. Robert La Bruzzo, who although was no longer with the company, was the General Manager of record with the DEQ. Attached to the letter were two reports containing "General Recommendations" and "Compliance Recommendations" on page 5 of the Facility Inspection Report and "Deficiencies" on page 3 of the Laboratory Inspection Report. The following summarizes Omega Protein's efforts at addressing these issues.

Laboratory Inspection Report:
Laboratory Records

1. Using nutrient General Guidelines, DMRs were recalculated and re-submitted on Dec 11, 2009

Laboratory Equipment

1. A daily log of the sample temperature is now maintained for both the "Sample Storage" refrigerator and the auto-samplers in use.

Facility Inspection Report
Compliance Recommendations

1. Bill Purcell from Omega is working with Denise Mosca/Jaime Bauer (DEQ) to develop a concept engineering report (CER) for DAF treatment and UV disinfection units
2. We will ensure that one foot of freeboard is maintained all times at the sludge holding lagoon

General Recommendations

1. The sludge holding area by the lagoon is expected to reach capacity by the end of the 2010 season. A plan will be implemented before that time to accommodate the additional solids. We are looking at several options ranging from landfilling to land application on agricultural land to using the algae sludge as feedstock for a biofuel manufacturer.

1/7/2010

Ted Schultz

Omega Protein, Inc.
610 Menhaden Road
Reedville, VA 22539
Phone 804.453.4211 ext 120 | Fax 804.453.4123
Email tschultz@OmegaProteinInc.com | <http://www.omegaproteininc.com>

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CC - STEVE STELL - OWCP

1/7/2010

Sent: Tuesday, December 29, 2009 2:42 PM
To: Dare, Michael
Subject: RE: Response to inspection report

Mike, the attached letter was sent out Dec 11, with the updated DMRs. I have a return receipt for the package stamped Dec 14th in Reedville and the delivery receipt from Glen Allen stamped Dec 15, 2009

Ted Schultz

Omega Protein, Inc.
610 Menhaden Road
Reedville, VA 22539
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From: Dare, Michael [<mailto:Michael.Dare@deq.virginia.gov>]
Sent: Tuesday, December 29, 2009 2:33 PM
To: Ted Schultz
Subject: Response to inspection report

Ted,

Just checking to see if you've had a chance to put together a response to the most recent inspection reports.

Thanks,

Mike Dare

Water Inspector

Virginia Department of Environmental Quality

Piedmont Regional Office

4949-A Cox Road

Glen Allen, VA 23060

Phone: 804-527-5055

Fax: 804-527-5106

12/30/2009

December 11, 2009

Mike Dare
Water Inspector
Department of Environmental Quality
4949-A Cox Road
Glen Allen, VA 23060-6296

Re: Deficiencies noted on Laboratory Inspection report from November 5,
2009 Inspection

Dear Mr. Dare:

Using the Nutrient General Permit Guidelines, as pointed out in the report for the November 5, 2009 inspection; the General DMR's for 2009 have been recalculated. The attached DMR's include outfalls 500, 501 and 502 for the active months of May through October, plus re-submittal of outfall 500 for November, which contained a mistake in the Year to Date values in the copy submitted via fax and mail on November 9, 2009.

Please call or email if further information or clarification is needed.

Sincerely,

Ted Schultz
tschultz@omegaproteininc.com

Enclosures

Dare, Michael

From: Ted Schultz [tschultz@OmegaProteinInc.com]
Sent: Wednesday, December 30, 2009 9:52 AM
To: Dare, Michael
Subject: RE: Response to inspection report
Attachments: 100_0408.JPG

The other deficiency listed on page 3 of Laboratory Inspection Report I assumed that you'd just expect to see a log during your next visit, but the attached is a pix of a log sheet used when the refrig held samples.

Bill Purcell was given the facility report and I know he has talked to Denise, who is retiring; so I don't know the final outcome.

Ted Schultz

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From: Dare, Michael [mailto:Michael.Dare@deq.virginia.gov]
Sent: Tuesday, December 29, 2009 2:55 PM
To: Ted Schultz
Subject: RE: Response to inspection report

Thanks; yes, I did receive that letter and DMR's. There was one other lab deficiency (pg 3 of the lab inspection report). There were also 2 compliance recommendations and one general recommendation in the facility inspection report (pg 5). Please provide corrective actions.

Thanks,

Mike Dare
Water Inspector
Virginia Department of Environmental Quality
Piedmont Regional Office
4949-A Cox Road
Glen Allen, VA 23060
Phone: 804-527-5055
Fax: 804-527-5106

From: Ted Schultz [mailto:tschultz@OmegaProteinInc.com]
Sent: Tuesday, December 29, 2009 2:42 PM
To: Dare, Michael
Subject: RE: Response to inspection report

Mike, the attached letter was sent out Dec 11, with the updated DMRs. I have a return receipt for the package stamped Dec 14th in

12/30/2009

Reedville and the delivery receipt from Glen Allen stamped Dec 15, 2009

Ted Schultz

Omega Protein, Inc.
610 Menhaden Road
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From: Dare, Michael [mailto:Michael.Dare@deq.virginia.gov]
Sent: Tuesday, December 29, 2009 2:33 PM
To: Ted Schultz
Subject: Response to inspection report

Ted,

Just checking to see if you've had a chance to put together a response to the most recent inspection reports.

Thanks,

Mike Dare

Water Inspector

Virginia Department of Environmental Quality

Piedmont Regional Office

4949-A Cox Road

Glen Allen, VA 23060

Phone: 804-527-5055

Fax: 804-527-5106

12/30/2009

VPOES
RDV Lab

Sample Storage Temperatures

Date	Temp (°C)	Date	Temp (°C)	Date	Temp (°C)
11/18/2008	7.2	12/18/2008	11/17/2010	2/18/2010	
11/18/2008	7.2	12/18/2008	11/18/2010	2/17/2010	
11/20/2008	7.0	12/20/2008	11/19/2010	2/18/2010	
11/21/2008		12/21/2008	11/20/2010	2/19/2010	
11/22/2008	4.9	12/22/2008	12/1/2010	2/20/2010	
11/23/2008		12/23/2008	12/2/2010	2/21/2010	
11/24/2008		12/24/2008	12/3/2010	2/22/2010	
11/25/2008		12/25/2008	12/4/2010	2/23/2010	
11/26/2008		12/26/2008	12/5/2010	2/24/2010	
11/27/2008		12/27/2008	12/6/2010	2/25/2010	
11/28/2008		12/28/2008	12/7/2010	2/26/2010	
11/29/2008	5.6	12/29/2008	12/8/2010	2/27/2010	
11/30/2008	5.1	12/30/2008	12/9/2010	2/28/2010	
12/1/2008	3.9	12/31/2008	12/10/2010	2/29/2010	
12/2/2008	2.5	1/1/2009	12/11/2010	2/30/2010	
12/3/2008		1/2/2009	12/12/2010	3/1/2010	
12/4/2008		1/3/2009	12/13/2010	3/2/2010	
12/5/2008		1/4/2009	12/14/2010	3/3/2010	
12/6/2008	2.1	1/5/2009	12/15/2010	3/4/2010	
12/7/2008	2.4	1/6/2009	12/16/2010	3/5/2010	
12/8/2008	1.9	1/7/2009	12/17/2010	3/6/2010	
12/9/2008	1.8	1/8/2009	12/18/2010	3/7/2010	
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12/29/2008		1/28/2009	1/8/2011	3/27/2010	
12/30/2008		1/29/2009	1/9/2011	3/28/2010	
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3/21/2009		4/19/2009	3/30/2011	6/18/2010	
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3/24/2009		4/22/2009	4/2/2011	6/21/2010	
3/25/2009		4/23/2009	4/3/2011	6/22/2010	
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3/31/2009		4/29/2009	4/9/2011	6/28/2010	
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4/2/2009		5/1/2009	4/11/2011	6/30/2010	
4/3/2009		5/2/2009	4/12/2011	7/1/2010	
4/4/2009		5/3/2009	4/13/2011	7/2/2010	
4/5/2009		5/4/2009	4/14/2011	7/3/2010	
4/6/2009		5/5/2009	4/15/2011	7/4/2010	
4/7/2009		5/6/2009	4/16/2011	7/5/2010	
4/8/2009		5/7/2009	4/17/2011	7/6/2010	
4/9/2009		5/8/2009	4/18/2011	7/7/2010	
4/10/2009		5/9/2009	4/19/2011	7/8/2010	
4/11/2009		5/10/2009	4/20/2011	7/9/2010	
4/12/2009		5/11/2009	4/21/2011	7/10/2010	
4/13/2009		5/12/2009	4/22/2011	7/11/2010	
4/14/2009		5/13/2009	4/23/2011	7/12/2010	
4/15/2009		5/14/2009	4/24/2011	7/13/2010	
4/16/2009		5/15/2009	4/25/2011	7/14/2010	
4/17/2009		5/16/2009	4/26/2011	7/15/2010	
4/18/2009		5/17/2009	4/27/2011	7/16/2010	
4/19/2009		5/18/2009	4/28/2011	7/17/2010	
4/20/2009		5/19/2009	4/29/2011	7/18/2010	
4/21/2009		5/20/2009	4/30/2011	7/19/2010	
4/22/2009		5/21/2009	5/1/2011	7/20/2010	
4/23/2009		5/22/2009	5/2/2011	7/21/2010	
4/24/2009		5/23/2009	5/3/2011	7/22/2010	
4/25/2009		5/24/2009	5/4/2011	7/23/2010	
4/26/2009		5/25/2009	5/5/2011	7/24/2010	
4/27/2009		5/26/2009	5/6/2011	7/25/2010	
4/28/2009		5/27/2009	5/7/2011	7/26/2010	
4/29/2009		5/28/2009	5/8/2011	7/27/2010	
4/30/2009		5/29/2009	5/9/2011	7/28/2010	
5/1/2009		5/30/2009	5/10/2011	7/29/2010	
5/2/2009		5/31/2009	5/11/2011	7/30/2010	
5/3/2009		6/1/2009	5/12/2011	7/31/2010	
5/4/2009		6/2/2009	5/13/2011	8/1/2010	
5/5/2009		6/3/2009	5/14/2011	8/2/2010	
5/6/2009		6/4/2009	5/15/2011	8/3/2010	
5/7/2009		6/5/2009	5/16/2011	8/4/2010	
5/8/2009		6/6/2009	5/17/2011	8/5/2010	
5/9/2009		6/7/2009	5/18/2011	8/6/2010	
5/10/2009		6/8/2009	5/19/2011	8/7/2010	
5/11/2009		6/9/2009	5/20/		

Date	Temp (°C)	Date	Temp (°C)	Date	Temp (°C)	Date	Temp (°C)	Date	Temp (°C)	Date	Temp (°C)	Date	Temp (°C)	Date	Temp (°C)
11/16/2010	2.2	12/16/2009		1/16/2010		2/16/2010		3/16/2010		4/16/2010		5/16/2010		6/16/2010	
11/16/2009	2.0	12/16/2008		1/16/2009		2/16/2009		3/16/2009		4/16/2009		5/16/2009		6/16/2009	
11/16/2008		12/16/2007		1/16/2008		2/16/2008		3/16/2008		4/16/2008		5/16/2008		6/16/2008	
11/16/2007	4.9	12/16/2006		1/16/2007		2/16/2007		3/16/2007		4/16/2007		5/16/2007		6/16/2007	
11/16/2006		12/16/2005		1/16/2006		2/16/2006		3/16/2006		4/16/2006		5/16/2006		6/16/2006	
11/16/2005		12/16/2004		1/16/2005		2/16/2005		3/16/2005		4/16/2005		5/16/2005		6/16/2005	
11/16/2004		12/16/2003		1/16/2004		2/16/2004		3/16/2004		4/16/2004		5/16/2004		6/16/2004	
11/16/2003		12/16/2002		1/16/2003		2/16/2003		3/16/2003		4/16/2003		5/16/2003		6/16/2003	
11/16/2002		12/16/2001		1/16/2002		2/16/2002		3/16/2002		4/16/2002		5/16/2002		6/16/2002	
11/16/2001		12/16/2000		1/16/2001		2/16/2001		3/16/2001		4/16/2001		5/16/2001		6/16/2001	
11/16/2000		12/16/1999		1/16/2000		2/16/2000		3/16/2000		4/16/2000		5/16/2000		6/16/2000	
11/16/1999		12/16/1998		1/16/1999		2/16/1999		3/16/1999		4/16/1999		5/16/1999		6/16/1999	
11/16/1998		12/16/1997		1/16/1998		2/16/1998		3/16/1998		4/16/1998		5/16/1998		6/16/1998	
11/16/1997		12/16/1996		1/16/1997		2/16/1997		3/16/1997		4/16/1997		5/16/1997		6/16/1997	
11/16/1996		12/16/1995		1/16/1996		2/16/1996		3/16/1996		4/16/1996		5/16/1996		6/16/1996	
11/16/1995		12/16/1994		1/16/1995		2/16/1995		3/16/1995		4/16/1995		5/16/1995		6/16/1995	
11/16/1994		12/16/1993		1/16/1994		2/16/1994		3/16/1994		4/16/1994		5/16/1994		6/16/1994	
11/16/1993		12/16/1992		1/16/1993		2/16/1993		3/16/1993		4/16/1993		5/16/1993		6/16/1993	
11/16/1992		12/16/1991		1/16/1992		2/16/1992		3/16/1992		4/16/1992		5/16/1992		6/16/1992	
11/16/1991		12/16/1990		1/16/1991		2/16/1991		3/16/1991		4/16/1991		5/16/1991		6/16/1991	
11/16/1990		12/16/1989		1/16/1990		2/16/1990		3/16/1990		4/16/1990		5/16/1990		6/16/1990	
11/16/1989		12/16/1988		1/16/1989		2/16/1989		3/16/1989		4/16/1989		5/16/1989		6/16/1989	
11/16/1988		12/16/1987		1/16/1988		2/16/1988		3/16/1988		4/16/1988		5/16/1988		6/16/1988	
11/16/1987		12/16/1986		1/16/1987		2/16/1987		3/16/1987		4/16/1987		5/16/1987		6/16/1987	
11/16/1986		12/16/1985		1/16/1986		2/16/1986		3/16/1986		4/16/1986		5/16/1986		6/16/1986	
11/16/1985		12/16/1984		1/16/1985		2/16/1985		3/16/1985		4					

12/30/2009

Cash Suppliers Only

Thanks,

Mike Dare
Water Inspector
Virginia Department of Environmental Quality
Piedmont Regional Office
4949-A Cox Road
Glen Allen, VA 23060
Phone: 804-527-5055
Fax: 804-527-5106

From: Ted Schultz [mailto:tschultz@OmegaProteinInc.com]
Sent: Wednesday, December 30, 2009 9:52 AM
To: Dare, Michael
Subject: RE: Response to inspection report

The other deficiency listed on page 3 of Laboratory Inspection Report I assumed that you'd just expect to see a log during your next visit, but the attached is a pix of a log sheet used when the refrig held samples.

Bill Purcell was given the facility report and I know he has talked to Denise, who is retiring; so I don't know the final outcome.

Ted Schultz

Omega Protein, Inc.
610 Menhaden Road
Reedville, VA 22539
Phone 804.453.4211 ext 120 | Fax 804.453.4123
Email: tschultz@OmegaProteinInc.com | <http://www.omegaproteininc.com>

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From: Dare, Michael [mailto:Michael.Dare@deq.virginia.gov]
Sent: Tuesday, December 29, 2009 2:55 PM
To: Ted Schultz
Subject: RE: Response to inspection report

Thanks; yes, I did receive that letter and DMR's. There was one other lab deficiency (pg 3 of the lab inspection report). There were also 2 compliance recommendations and one general recommendation in the facility inspection report (pg 5). Please provide corrective actions.

Thanks,

Mike Dare
Water Inspector
Virginia Department of Environmental Quality
Piedmont Regional Office
4949-A Cox Road
Glen Allen, VA 23060
Phone: 804-527-5055
Fax: 804-527-5106

From: Ted Schultz [mailto:tschultz@OmegaProteinInc.com]

12/30/2009

Dare, Michael

From: Dare, Michael
Sent: Wednesday, December 30, 2009 10:38 AM
To: 'Ted Schultz'
Subject: RE: Response to inspection report

The freeboard comment was in reference to the sludge lagoon -- personnel placing sludge in the lagoon should be aware of the 1 foot freeboard requirement.

Mike Dare
Water Inspector
Virginia Department of Environmental Quality
Piedmont Regional Office
4949-A Cox Road
Glen Allen, VA 23060
Phone: 804-527-5055
Fax: 804-527-5106

From: Ted Schultz [mailto:tschultz@OmegaProteinInc.com]
Sent: Wednesday, December 30, 2009 10:30 AM
To: Dare, Michael
Subject: RE: Response to inspection report

Yes,

I looked at the ponds yesterday and although I didn't use a tape, it looks to me as there's a foot of freeboard. Once everyone is back (next Monday) they (meaning Bill and management) will be working on a plan to either add a third pond, reconfigure the existing ponds, remove sludge from the pit, clean out pond no 1. DEQ will be informed prior to any planned discharges.

Ted Schultz

Omega Protein, Inc.
610 Menhaden Road
Reedville, VA 22539
Phone 804.453.4211 ext 120 | Fax 804.453.4123
Email tschultz@OmegaProteinInc.com | <http://www.omegaproteininc.com>

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From: Dare, Michael [mailto:Michael.Dare@deq.virginia.gov]
Sent: Wednesday, December 30, 2009 10:18 AM
To: Ted Schultz
Subject: RE: Response to inspection report

Thanks -- there are two other recommendations: Ensure that a 1-foot freeboard is maintained in the sludge holding pond and indicate that a plan is/will be developed for the handling of solids produced at the facility once the lagoon reaches capacity. Is Bill also handling these?

12/30/2009

Dare, Michael

From: Dare, Michael
Sent: Tuesday, January 05, 2010 7:02 AM
To: 'Ted Schultz'
Subject: FW: Inspection report

Please send one email (separate from this string) addressing all recommendations. I suggest the following type format. (* Indicates items discussed with Bill Purcell on 1/4/10):

Facility Inspection Report
Compliance Recommendations

1. *Bill Purcell (Omega) is working with Denise Mosca (DEQ) to resolve the CTO issue.
2. *A one foot freeboard is maintained at all times at the sludge holding lagoon...

General Recommendations

1. * A plan will be developed for the handling of solids produced at the facility once the sludge holding lagoon reaches capacity.

Laboratory Inspection Report
Laboratory Records

1. Updated DMR's were submitted to the DEQ on December 11, 2009.

Laboratory Equipment

1. A daily log is now maintained for the sample refrigerator and **auto sampler?** temperatures.

Please send email to Michael.dare@deq.virginia.gov

Thanks,

Mike Dare
Water Inspector
Virginia Department of Environmental Quality
Piedmont Regional Office
4949-A Cox Road
Glen Allen, VA 23060
Phone: 804-527-5055
Fax: 804-527-5106

From: mike dare [mailto:shdmwd@hotmail.com]
Sent: Monday, January 04, 2010 6:56 PM
To: Dare, Michael
Subject: FW: Inspection report

Subject: Inspection report
Date: Mon, 4 Jan 2010 13:53:36 -0600
From: tschultz@OmegaProteinInc.com
To: shdmwd@hotmail.com

1/6/2010

Mike,

I just spoke to Bill P., however he was called away before we could complete the discussion. He did mention that there were still some items from the labh side of the report you were waiting for. I was under the impression that the redo of the DMRs and the picture of the temp log on the refrigerator had satisfied my part. Is the something else you need from me?

Ted Schultz

Omega Protein, Inc.

610 Menhaden Road

Reedville, VA 22539

Phone 804.453.4211 ext 120 | **Fax** 804.453.4123

Email tschultz@OmegaProteinInc.com | <http://www.omegaproteininc.com>

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1/6/2010



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FEB 04 2010

PRO

February 2, 2010

Mr Kyle Ivar Winter, Deputy Regional Director
Virginia Dept of Environmental Quality
Piedmont Regional Office
4949-A Cox Road
Glen Allen, VA 23060

Re: NOV No. W2010-01-P-0001

Dear Mr. Winter: *Kyle*

We were disappointed to receive the above referenced NOV as Omega Protein, Inc. takes environmental compliance very seriously and strive to address issues to the best our ability. In reading the observations listed in the NOV there are factual errors that are that we believe have a direct bearing on whether the NOV should have been issued. We will address the items as they are referenced in the NOV.

- a) **Observation:** While fueling a vessel at approximately 0600 hours on October 27, 2009, equipment failure resulted in the release of approximately 50 gallons of diesel fuel into Cockrell Creek. **Response:** A vessel was not being fueled at the time of the release. The seal on the diesel pump for our fishing vessels failed some time during the early morning of October 27. The leak was discovered around daybreak (0600 hours) when the pump was immediately turned off, the area was boomed off and the National Response Center notified. The spill was contained within the boomed area and the diesel recovered with absorbent pads. The Coast Guard conducted a site inspection that morning and commended Omega for quick response and a complete clean-up. To prevent recurrence of another incident Omega removed the pump and ordered/installed an entirely new pumping system and we also installed a timer on the pump to avoid prolonged operating time which could result in this type incident.
- b) **Observation:** Permit required information submitted via the DEQ's eDMR application for the November 2009 monitoring period did not contain data in regards to the permit required monitoring of refrigeration water discharges required by Part I.B.3 of the above referenced permit. **Response:** The first fishing Omega did during the month of November was during the second week of that month. The weather conditions were extremely windy and cold making Bay sampling dangerous; at the time we fully believed we would have additional, safer opportunity to conduct required sampling. The weather in November was not good, and we did not fish the remainder of the month and thus did not have the opportunity to take samples. The next and last day fish were caught was December 8th. A double set of samples were collected on that day to make up for the missed November sampling. People at the plant cannot remember another November that

weather prevented Omega from catching fish. It is also worth pointing out that a Bay refrigeration sample has never shown values above background levels.

- c) Observation: During the dismantling of a 2000 gallon above ground storage tank on December 2, 2009 approximately 30 gallons of fish oil was released to Cockrell Creek. The initial report was received at the DEQ-PRO, from the Virginia Department of Emergency Management's Emergency Operations Center, on December 3, 2009. A written follow-up in regards to this incident was received via email on December 15, 2009. Response: The contractor that was working the Ampro site was given explicit instructions by the General Manager not to touch the 3 tanks at the Ampro site. There were two approximately 150,000-200,000 gallon fish soluble tanks and a smaller caustic tank. The contractor was told not to demolish the tanks because we were aware that there were tank bottoms remaining in the soluble tanks and we were going to take the tanks down from the top so the contents could be managed under controlled conditions. Instead the contractor breached the tank on December 2, 2009 and did not inform us. The contractor had been onsite since September 1, 2009 and we had no reason to believe he would disregard our instructions. A significant rain event that occurred on December 2-3 washed approximately 30 gallons of fish oil in Cockrell Creek. Fish oil was observed at the plant on the morning of December 3 at which time we called the emergency response number. The spilled oil was cleaned from the creek and the site was remediated. The contractor was terminated.
- d) Observation: During a compliance inspection conducted on November 5, 2009 a representative of DEQ-PRO observed newly installed dissolved air flotation and ultraviolet disinfection units in operation at the treatment train discharging to permitted Outfall 002. Response: Correspondence was made with Denise Mosca regarding our progress to meet the permit compliance schedule for phosphorus, fecal coliforms and enterococci. A Conceptual Engineering Report will be submitted as requested.

I trust this clarifies the issues in the NOV. If you require additional information please contact me directly.

Sincerely,



William Purcell
Environmental Manager
Omega Protein, Inc.

pc: Monty Deihl
Dennis Quick



COMMONWEALTH of VIRGINIA

DEPARTMENT OF ENVIRONMENTAL QUALITY

PIEDMONT REGIONAL OFFICE

4949-A Cox Road, Glen Allen, Virginia 23060

(804) 527-5020 Fax (804) 527-5106

www.deq.virginia.gov

Douglas W. Domenech
Secretary of Natural Resources

David K. Paylor
Director

March 1, 2010

Mr. William Purcell
Omega Protein, Inc.
P.O. Box 175
Reedville, VA 22539

RE: NOV No. W2010-01-P-0001
VPDES Permit No. VA0003867

Dear Mr. Purcell,

Thank you for your February 2, 2010 letter, written in response to the Notice of Violation referenced above. I appreciate the information provided; however additional information is necessary to clarify some of the statements in your letter and to follow up the January 28, 2010 DEQ site visit. This letter should be considered a formal information request, issued under the authority of Va. Code § 62.1-44.21. Please provide the information and explanations requested below **no later than March 23, 2010**.

- 1) In Item b of your February 2, 2010 letter, you indicate that the first fishing during the month of November 2009 occurred during the second week of that month. Due to adverse weather conditions, sampling of the refrigeration discharges was postponed until a later, safer date. You indicate that Omega did not fish for the remainder of November, and therefore no sample was collected for that month. A double sample was collected in December.

As you may recall, during DEQ's January 28, 2010 site visit, I collected copies of the bail/refrigeration discharge logs for each ship, for the months of October through December 2009. The logs indicate that a total of 22 discharges of bail/refrigeration water occurred during the month of November, on November 5, 6, 9, 10, 11, 13, 14, 15, 16, 19, 26, and 28. Please explain the apparent conflict between the explanation in your

February 2 letter and the discharge logs. Why were samples not collected during the discharges that occurred after the second week of November?

- 2) Further review of the October and December 2009 discharge logs indicates that there is a conflict between the logs and the Chesapeake Bay Water Quality Monitoring Data for those months. The data submitted indicate that an October 29, 2009 discharge from the vessel *Lancaster* was sampled, and a December 8, 2009 discharge from the vessel *Kimberly* was sampled. The discharge logs provided to the Department on January 28, 2010 did not list discharges from these ships on these dates. Please explain this apparent discrepancy.
- 3) The refrigeration discharge monitoring data submitted for the months of October and December 2009 lists Ted Schultz as the sampler for all samples. The sample times indicate that Mr. Schultz samples discharges from two different vessels within a time span of 5 to 15 minutes. Please explain the sampling process. Is Mr. Schultz onboard each discharging vessel? If so, how does he switch vessels in such a short period of time?
- 4) During the January 28, 2010 DEQ site visit, you verbally indicated that there was no difference between bail and refrigeration water. You stated that ships are brought to the dock with fish and refrigeration water in the hold, and that the refrigeration water is used to bail the fish from the vessel and returned to the same vessel for discharge to the Chesapeake Bay when the ship leaves port. You indicated that vessels do not fish on weekends; therefore, on Fridays, the refrigeration/bail water from all vessels is stored in Tank 40. This water is then pumped to the vessel *Gulf Island* and discharged to the Bay from this ship on Saturdays.
 - a. Please confirm that my understanding of the process is accurate, and if not, provide a written explanation of the process.
 - b. If refrigeration and bail water are the same, why do the captains of the *Reedville*, *Smuggler Point*, and *John Dempster* differentiate between the two types of discharges on the discharge logs?
- 5) During the first week of fishing in 2010, please perform an analysis of the bail/refrigeration water 1) in the hold of a ship prior to bailing of the fish and 2) in the hold of the same ship after the fish have been bailed and before the ship leaves to discharge the water in the Bay. Parameters must include BOD₅, dissolved oxygen, ammonia, temperature, pH, salinity, cyanide, and total suspended solids. In your response to this letter, please indicate the approximate date that Omega plans to resume

fishing. Within 10 days of sampling, please submit the analytical / monitoring results to DEQ and include the date and time of each sample, as well as the name of the person taking the sample.

Please provide a written response to the above **no later than March 23, 2010**. If you have any questions or concerns, please do not hesitate to contact me by phone at (804) 527-5086 or by email at Allison.dunaway@deq.virginia.gov. Thank you for your cooperation.

Sincerely,



Allison C. Dunaway
Enforcement Manager

cc: Jaime Bauer, DEQ-PRO



RECEIVED
MAR 12 2010
PRO

March 10, 2010

Ms. Allison Dunaway, Enforcement Manager
Virginia Dept of Environmental Quality
Piedmont Regional Office
4949-A Cox Road
Glen Allen, VA 23060

Re: NOV No. W2010-01-P-0001

Dear Ms. Dunaway:

This letter is to clarify the points raised in your letter dated March 1, 2010. I will address our points in the order they are raised in your letter.

1. It is not possible to reconstruct Omega's fishing activities using the refrigeration water logs solely. As I explained during our January meeting the weather during the month of November made it difficult to safely collect our Chesapeake Bay samples. Our practice is to wait until the fleet is coming to port with their catch and meet them in a 24' boat in the Bay before they exit the deeper water, to collect two refrigeration water samples. As the weather gets colder the air gets denser which in turn will create rougher sea conditions when the wind blows. The wind blew for most of the month of November. This is reflected in our fish catch logs which I have attached. On the bottom right hand corner of each fish catch report the daily weather is logged. You can see the wind conditions ranged from small craft warnings to gale strength winds for most of the month of November. It is also readily apparent we only caught fish the second week of the month of November due to the extreme weather conditions. The weather patterns did not change the rest of the fall season. Following the second week in November Omega did not catch enough fish to process until December 8th when the double sample was collected. Following that date the decision was made to end the season. A review of the plant PLC logs which controls and logs the factory's equipment also verifies the plant operated only the second week in November that were caught on November 9th and came to the dock on November 10th. When the fishing vessels came to the dock on November 10th it was raining and the wind was blowing 27-30 knots out of the northeast. November 11th one vessel came in and it was still raining with the wind from the northeast at 33-38 knots. On the 12th it was still raining with wind 20-23 knots from the NNE and no boats came in. November 13th a small craft warning was still in effect but we do not collect samples on Friday because our laboratory

does not accept samples after 10 AM. No fish were caught the third week of November with the exception of 2 small catches (20,000 and 23,000) on Friday November 20th. The fish were kept refrigerated on the vessels. Sea conditions on Friday were small craft advisories and rain. No fish were caught the remainder of the month because of weather conditions and the Thanksgiving Holiday. Our records show no vessel activity after November 16 due to poor weather conditions. I trust this adequately explains why we did not collect bay samples the month of November.

2. The Lancaster did not pump off until October 29th when her fish were unloaded. The Kimberly's discharge log apparently was not completed misplaced or not turned in on as December 8th was the last day of fishing for the season. The fish catch report for December 8th shows the Kimberly arriving to port with fish when she was sampled.
3. As I explained earlier the fishing vessels are sampled when they are coming back to port from a smaller 24" boat. The samples are not collected from the fishing vessels. The sampling events are timed so that multiple vessels can be sampled in quick succession from the sample boat.
4. My point that refrigeration water and bail water are the same is based on make up of the water. It is blood water and fish particles. The organic strength of the water changes based on the temperature of the refrigeration water and the length of time the water is circulated over the fish. All waters pumped aboard the Gulf Island are hauled to U.S. territorial waters at least 3 miles off the coast of Virginia in the Atlantic Ocean. The captains differentiate between refrigeration water and bailing water because the captains and crew are paid to haul bailing water because it is considered an additional duty and it delays them from getting back on the fishing grounds.
5. The bay menhaden season begins the first Monday in May however fishing doesn't typically begin until the water warms in mid-May. Due to the attention the term 'bail water' has received Omega will be discharging all of this bailing water to the Atlantic Ocean in the 2010 season. We can however collect samples as requested.

Thank you for the opportunity to providing additional information. Please feel free to contact me if you have additional questions.

Sincerely,



William Purcell
Environmental Manager
Omega Protein, Inc.

pc: Monty Deihl
Dennis Quick